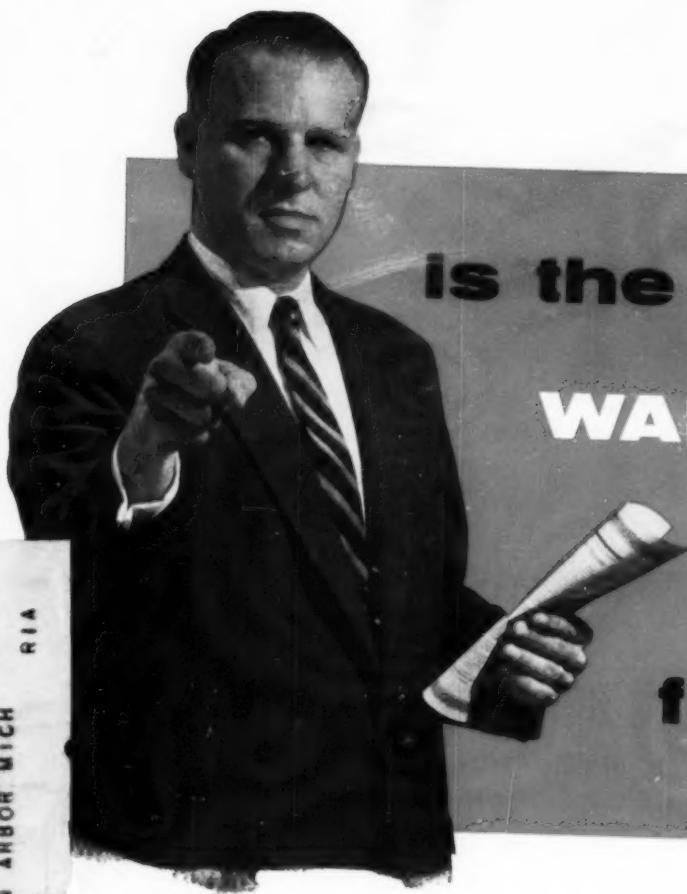


# Refrigeration & Air-conditioning Business

SEPTEMBER 1958



**Is the 5-YEAR  
WARRANTY  
good  
for you?**

STEVENSON RICE  
UNIVERSITY MICROFILMS  
313 NORTH FIRST ST  
ANN ARBOR, MICH RIA

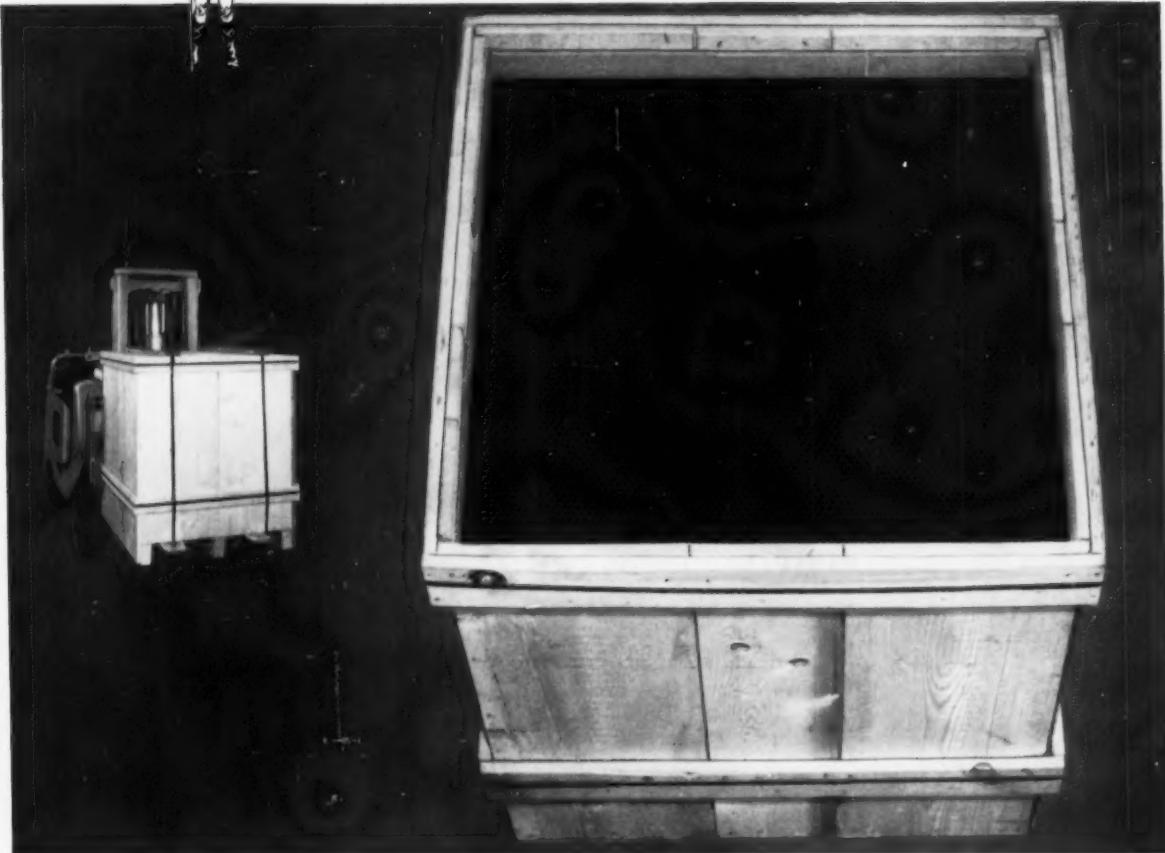


AN INDUSTRIAL PUBLISHING CORPORATION MAGAZINE

**DESIGNED TO HELP YOU SELL**



design for safe transit



## SAFE AS A BABY IN A CRADLE!

### EXTRA WORKABILITY

The proper kind of temper is vital in tube used for refrigeration and air conditioning purposes. VIKING Copper Tube has been produced with the best available annealing and tempering equipment, thus assuring perfect fabricating.

### ABSOLUTE, UNVARYING STRAIGHTNESS

A battery of straightening machines keeps VIKING Copper Tube absolutely, unvaryingly straight. In addition, these machines precisely temper the tube, imparting to it the correct surface hardness . . . assuring ease in fabrication resulting in substantial savings in time and labor.

### ELECTRONIC QUALITY CONTROL

An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubes . . . automatically discarding defective tubes. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.

1500 lbs. (over 20,000 ft.) of straight, de-burred, square-cut correctly tempered copper tube is carried with "loving care" in specially built crates individually designed to suit customers' requirements. VIKING designed packaging preserves original finish and prevents in-transit damage to VIKING Thin Wall Copper Tube, because each length supports *only its own weight!*

VIKING painstakingly controls every aspect of the production of its tube, and as perfectionists, takes pride in delivering every foot of VIKING Thin Wall Copper Tube uniform and perfect.

It is because of VIKING'S pioneering in quality, uniformity and dependability that VIKING Copper Tube is today the first choice of the nation's leading manufacturers of air conditioning and refrigeration units and coils.



# VIKING

COPPER TUBE CO.

CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER TUBE  
Circle No. 1 on Reader Service Card

# ALCO

the one complete line of

## REFRIGERANT CONTROLS

FOR AIR CONDITIONING  
AND REFRIGERATION



402



TIL-THL

Thermo®  
EXPANSION VALVES  
for all refrigerants  
from  $\frac{1}{4}$  to 200 tons

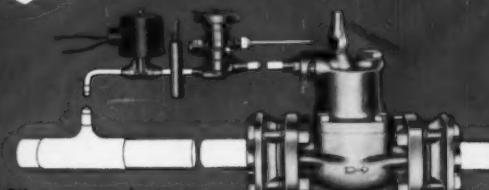


TCL



Vapor-Flow  
DISTRIBUTORS

wide application—low pressure drop—any  
position—one-piece construction—no nozzles



Pilot operated  
Thermo® EXPANSION VALVES... for larger installations

ALCO

VALVES • CONTROLS • STRAINERS • DISTRIBUTORS

FOR EVERY APPLICATION - DIRECT EXPANSION OR FLOODED SYSTEMS

5608-1



R6-R2



S120

SOLENOID VALVES  
Sizes & Types  
for every application  
and refrigerant



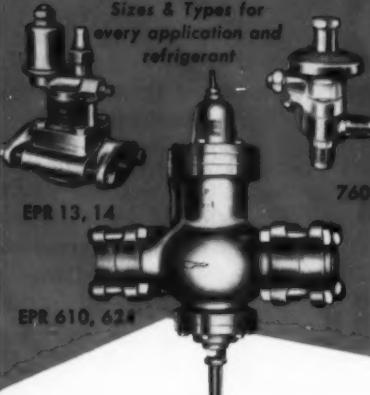
920

927

REFRIGERANT STRAINERS  
maximum Screen area—Sizes  
& Types for every application

### EVAPORATOR PRESSURE REGULATORS

Sizes & Types for  
every application and  
refrigerant



EPR 13, 14

760



Float  
SWITCHES  
for trouble  
free liquid  
level control

Use and Specify ALCO Controls  
the one complete line designed and  
engineered for efficient trouble free performance.

See your Alco Wholesaler —  
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- BUY QUALITY
- BUY ALCO

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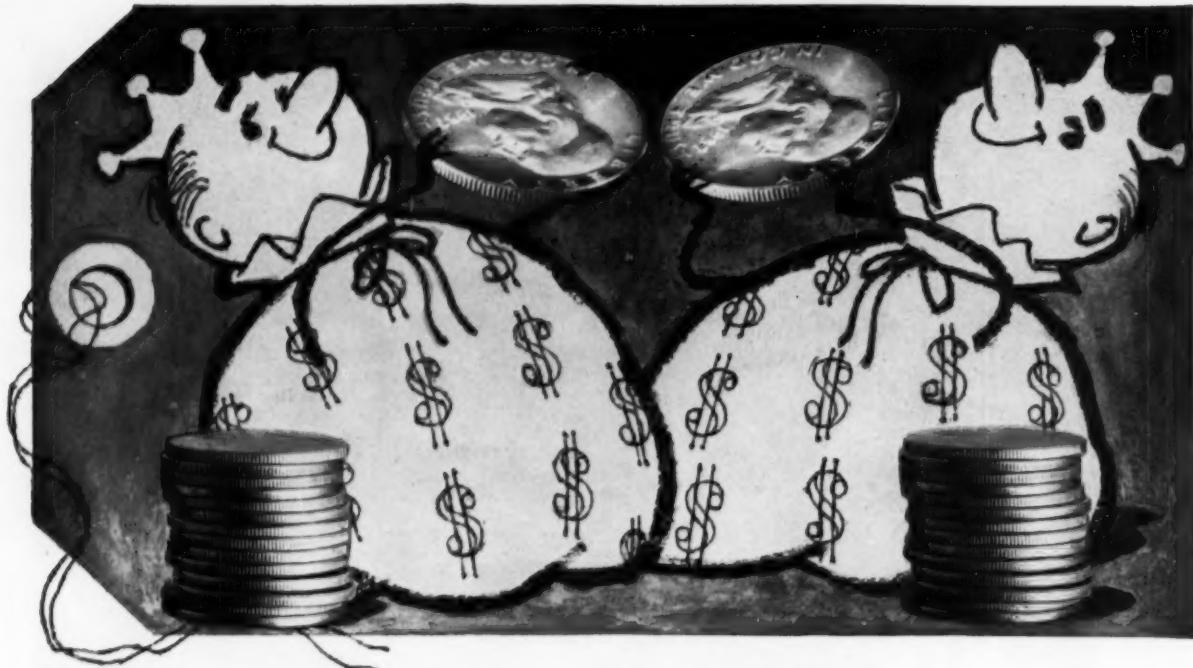
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843 KINGSLAND AVE. • ST. LOUIS 5, MO.

The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors  
Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

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# NEW PRICE POLICY!



## ★ Double Pay-Off Plan

ups  
your  
profit  
on

Now, with Airtemp's new Double Pay-Off Plan you get paid twice—once at the time of sale, and once by Airtemp with Airtemp's new Pay-Off Certificates.

The value of your Pay-Off Certificate will depend on the furnace or air conditioner you sell. But here's the important thing—you can use your Airtemp Pay-Off Certificates just like cash when you order new equipment.

This Double Pay-Off Plan helps you meet price competition and still make a fair profit. There are other reasons, too, why Airtemp dealers

make money—

- Airtemp's trouble-free operation cuts service calls, lets you *keep* your initial sale profit.
- Airtemp's really complete line—297 models. You can satisfy any customer.
- The prestige of the Chrysler name and Chrysler's famous engineering.
- Sales, engineering, service and business-operation training at Chrysler Corporation Service Centers.
- Pre-tested merchandising aids and incentive plans. Factory advertising in your local market.

## CHRYSLER

DO MORE BUSINESS



WITH AIRTEMP—

THE FORWARD LOOK IN AIR CONDITIONING



AIRTEMP DIVISION, CHRYSLER CORP.  
DEPT. RA-9-58, DAYTON 1, OHIO

Please send me full information on an Airtemp franchise.

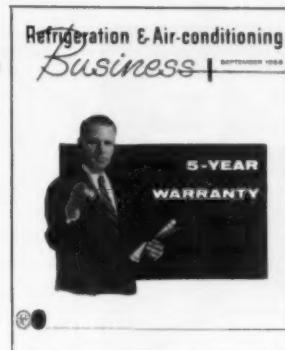
NAME.....

ADDRESS.....

CITY..... ZONE..... STATE.....

Circle No. 4 on Reader Service Card

reader's guide to



for September 1958

**COVER:** Here's your chance to sound off on the subject of the 5-year warranty. The article on pages 46-47 tells you what we think of it, and also expresses the views of some of the industry's leading manufacturers. Now we invite *you* to tell us why you like it . . . or why you don't.

## FEATURES

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It's been a rough year, but the right attitude can make 1959 the biggest ever

### 44 YOU CAN MAKE YOUR ELECTRIC UTILITY A SELLING PARTNER

Take full advantage of the promotion they're putting behind your products

### 46 IS THE 5-YEAR WARRANTY GOOD FOR YOU?

Here's our opinion . . . and a chance for you to tell us yours

### 48 YOU HAVE TO INSTALL IT FAST

This dealer sold auto air-conditioners faster than he could put them in!

### 51 AIR-CONDITIONING AIDS STEEL STORAGE

Pinpoint humidity control reduces handling costs, improves inventory control

### 52 SIMPLE IDEAS PAY OFF

Here are 5 simple ways to bring down costs and keep work flowing smoothly

### 54 PROFITABLE POINTERS ON CONTROL OF ADVERTISING

Part 9 of "You're the Boss", a series of articles on business management

### 57 SMALL SELF-CONTAINED UNITS CAN DO THAT BIG JOB

A total of 68 3 1/2-ton units mounted on the roof handle this 88,000-sq. ft. plant

### 58 MAKE MONEY ON SERVICE CONTRACTS

This contractor does it by making his service mechanics working partners

### 61 HOW DRY IS DRY?

The proper moisture indicator will tell you, and eliminate many service problems

### 63 DON'T WASTE SPACE

Even the ductwork is run outside the building to save space, preserve decor

### 65 CASH IN ON THE HEAT PUMP PACKAGE

This self-contained unit could prove the key to volume residential sales

## DEPARTMENTS



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# KING-SIZE CAPACITY



## New WIDE-WINDOW Dairy and bottle Drink **REFRIGERATOR** **COSTS LESS PER CU. FT. of DISPLAY** than so-called Economy Models!

Here's the new SCHMIDT Self-Contained Sliding Door Refrigerator that offers customers **extra capacity plus more display per cu. ft.** at low cost.

Wide-window visibility (13½ sq. ft. of glass) is combined with more lighting than ever before to boost sales appeal to a new high. Large capacity coil assures fast cooling, and large condensing unit (5 year warranty) means **minimum maintenance**.

Judged by Price, Capacity, Display or Quality here's a case that sells easily — quickly . . . and without "Trouble Calls".

Write today for new Bulletin SDL, and boost your sales volume tomorrow!

### New **SPACEMAKER** Walk-Ins . . .

- Coolers, Two-Temp and Freezer Models
- Sectional Steel Construction . . . Standard and Custom-Built Refrigerated Storage
- Non-skid Safety-walk floor, flush with door sill
- Exclusive Filter-Flo Coil prevents mixed odors, kills bacteria, costs less to operate.



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## Refrigeration & Air-conditioning Business

Formerly Commercial Refrigeration & Air Conditioning

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REFRIGERATION & AIR-CONDITIONING



## Are You Paying Premium Prices For Your Pipe Wrapping?

Now...cut costs, reduce inventories and profit more  
with the one standard insulation that fits every  
pipe and fitting, meets every service requirement!



NoDrip Tape means more profit, less work on every job...saves you time, labor, material. NoDrip Tape eliminates most multiple wrappings needed with thinner wraps...inferior wraps.

Why pay more when you can buy the handy 16 foot roll of  $\frac{1}{4}$ " thick NoDrip Tape at less than half the cost of a roll of ordinary  $\frac{1}{8}$ " wrapping...and far below the cost of pre-formed foam cellular insulations?

Next time an equipment cold line job

calls for permanent protection against condensation drip, "sweating" or frost, insist on using NoDrip Tape. Stops rust and corrosion, too...holds temperatures more constant and increases the efficiency of the cooling equipment. NoDrip Tape is pliable, cork-filled and completely self-adhering. Easy to work with...forms an air-tight, 100% vapor and moisture proof jacket. Needs no tools, vapor seals, fasteners, brads or adhesives.



### Easier to Apply...

EVEN AROUND JOINTS, TEES,  
VALVES OR ANGLES



For large pipes, tanks, air ducts, we recommend NoDrip Plastic Coating for permanent protection from condensation, rust and corrosion. Another fine Mortell refrigeration product, NoDrip can easily be applied by brush or trowel to metal, concrete, brick, plaster, tile or composition surfaces.

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**Mortell**  
COMPANY

Makers of Mortite Caulking Cord and Mortite Caulking Gum

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553 Burch St., Kankakee, Ill.

O.K. Send me full information about the complete line of Mortell refrigeration products.



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Firm \_\_\_\_\_

Address \_\_\_\_\_

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On the new *Connecticut Turnpike...*

**Go** with pleasure



ARCHITECT  
Fred Dixon

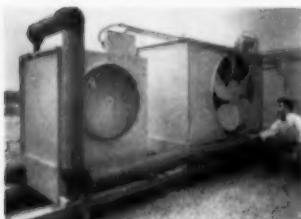
CONSULTING ENGINEER  
Wm. Carson

CONTRACTORS FOR HEATING, AIR CONDITIONING & REFRIGERATION  
Bay State York, Fred Roff Co., Becker and Goldstein

**Stop** in comfort...



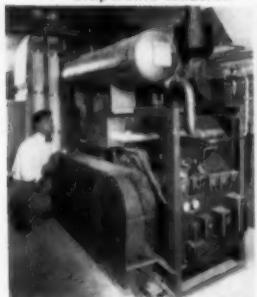
## Comfort made possible by COMPACT DUNHAM-BUSH EQUIPMENT



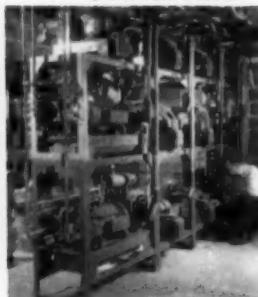
Rooftop installation of cooling tower and evaporative condenser



Low temp 'ED' electric defrost unit in walk-in cooler



'PC' 40 ton Heat-X package chiller for water chilling



Brunner-matic condensing units in rack assemblies

The matchless combination of engineered compact design and high performance efficiency—that's why Dunham-Bush was selected to serve the eight Savarin restaurants on the new Connecticut Thruway.

The single major problem at each of these eight locations was how to get maximum floor space to accommodate the many travelers, and yet have the kind of equipment necessary to insure complete customer comfort. A solution was sought . . . Dunham-Bush was selected.

Units of the following types are installed at each of the new eating places . . . for complete atmospheric comfort and proper food and drink conditioning: Packaged Water Chillers, Unit Coolers, Evaporative Condensers—all with patented Inner-Fin construction that permits compactness of design previously impossible; Air Handling units, Oil Separator Mufflers, and Rack Assembled Condensing units (for extra space-saving convenience).

Depend on Dunham-Bush, the single, compact organization that has the product depth, diversity, and experience to satisfy every demand for heating, air conditioning and refrigeration equipment.

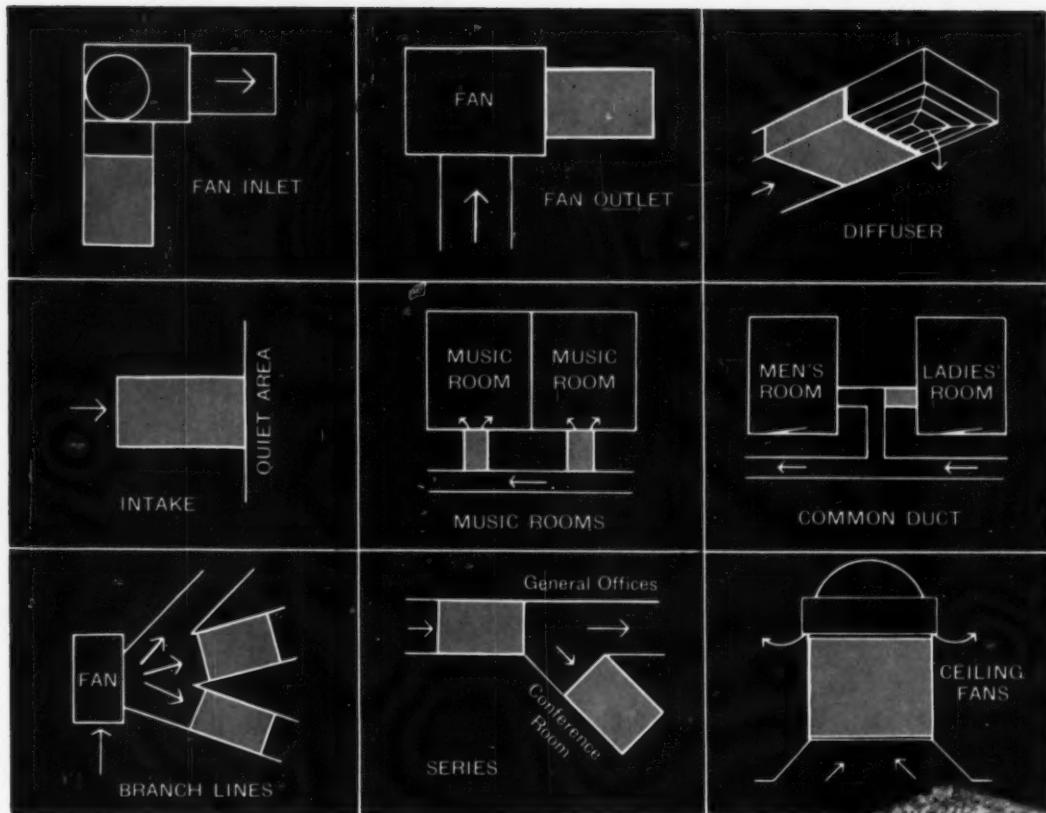
**Dunham-Bush, Inc.**

WEST HARTFORD 10 • CONNECTICUT • U. S. A.

**DUNHAM-BUSH**

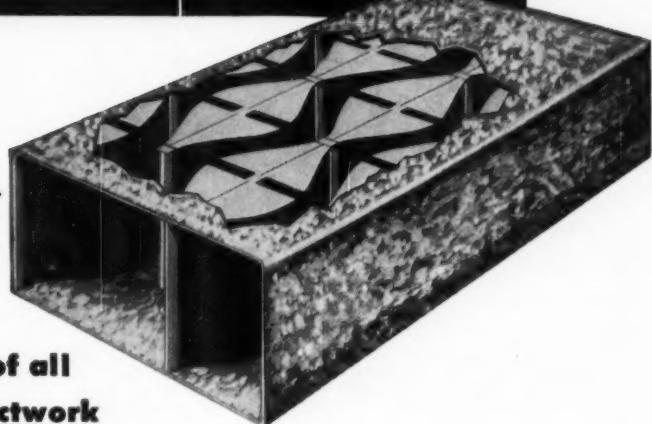
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## Every Building Needs *Aircoustat* Sound Traps

**AIRCOUSTAT silences all noise of all frequencies traveling through ductwork**



Eliminate disturbance, distraction and irritation caused by noises escaping from one area to another through ductwork.

Install **AIRCOUSTAT** Sound Traps. **AIRCOUSTAT** eliminates guesswork, wasted space and unnecessary expense of duct lining. You can guarantee your client trouble-free performance. You can estimate with complete confidence the perform-

ance of particular applications. If **AIRCOUSTAT** fits geometrically, it fits acoustically.

**AIRCOUSTAT** saves you space. Its greater effectiveness permits smaller-sized ducting. It eliminates bulky mufflers.

For more details, write to **KOPPERS COMPANY, INC.**, Industrial Sound Control Dept., 7709 Scott Street, Baltimore 3, Md.

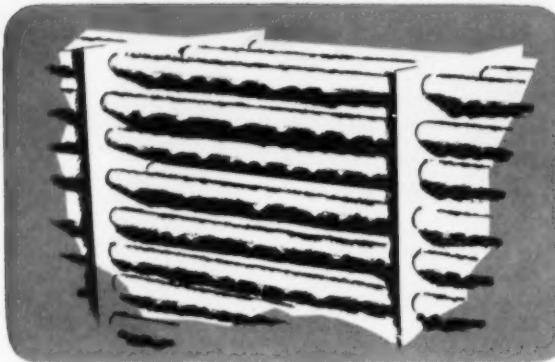


### INDUSTRIAL SOUND CONTROL

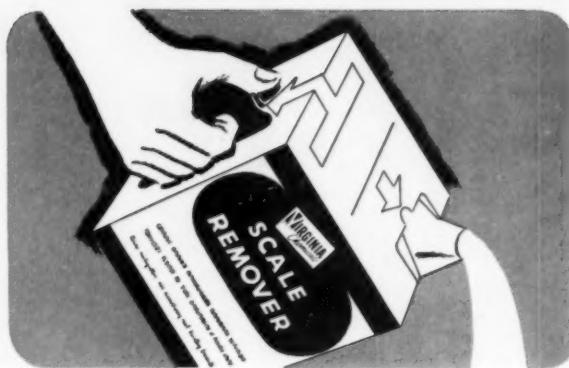
Engineered Products Sold with Service

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# NOW in a shatterproof throwaway container... easy-storing, easy-pouring... "VIRGINIA" LIQUID SCALE REMOVER



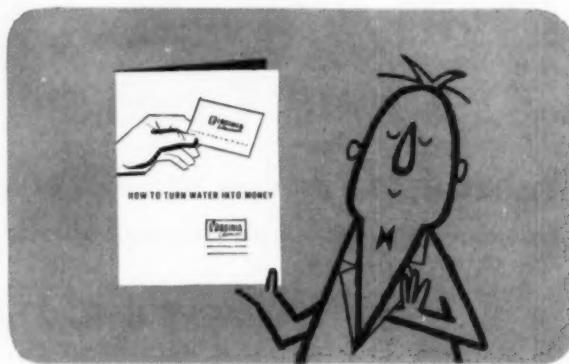
Units choked with thick scale? You need "Virginia" Liquid Scale Remover. Goes to work instantly, cleans rapidly with dissolving capacity 50% greater than similar cleaners. Effectively inhibited to prevent damage to metals.



Light container is much easier to handle than heavy gallon jugs. Prevents breakage, splash and drip. Tough plastic liner and spout make pouring easy. To close, just fold spout, attach clip, and it's safely resealed, ready to store.



For reliable, efficient water treatment, use "Virginia" chemicals—Water Treatment Scale and Corrosion Inhibitor, Solid and Liquid Scale Removers, Algae-Cides #1 and #2, and Ice Machine Cleaner. Get them all from your nearest wholesaler.



A new moneymaker for service companies is the "Virginia" Water Treatment Plan. For details, get free folder, "How to Turn Water into Money." Write Refrigeration Division, VIRGINIA SMELTING CO., 289 Jefferson St., W. Norfolk, Va.

ESOTOO • V-METH-L • CAN-O-GAS • VASCO-CEL • PERMAGUM • PRESSTITE TAPE • KWIKWRAP • SUNISO REFRIGERATION OILS • WATER TREATMENT CHEMICALS • SALES AGENT & REPACKER FOR "FREON" REFRIGERANTS

Available in Canada and many other countries

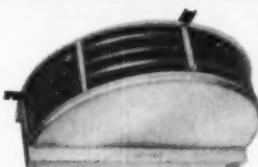
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8



REFRIGERATION & AIR-CONDITIONING

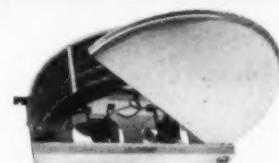
# TENNEY



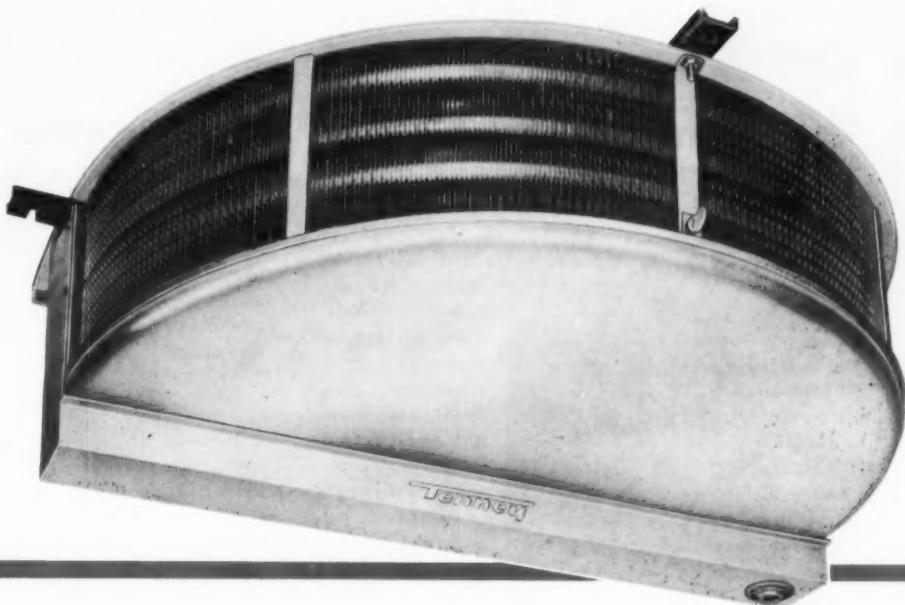
half round...



twin fanned...



easy to service



## Tenney TW and TWF unit coolers now ALL-ALUMINUM!

More cooling power per square inch and most convenient installation with Tenney's TW and TWF unit coolers than with any other comparable units—and now they're built of lightweight, rustproof aluminum. True half round design insures maximum air distribution. It hugs up tight against the ceiling and its unique design allows maximum product storage. Service is so simple—flick off a thumb screw and the entire

unit is open, with all parts within easy reach. You never disturb existing refrigeration, electrical or water drain lines! And in case of emergency, one of the unit's two fan-and-motor combinations can maintain safe temperatures until help arrives. Standard filters are optional on both units. Write for literature and technical data on these new all-aluminum TW and TWF unit coolers today.



Write for Bulletin 104-54

Engineers and Manufacturers  
of Refrigeration and  
Environmental Equipment

1090 SPRINGFIELD ROAD, UNION, NEW JERSEY

• PLANTS: UNION, NEW JERSEY AND BALTIMORE, MARYLAND

Circle No. 10 on Reader Service Card

BUSINESS • SEPTEMBER 1958

**Tenney**  
ENGINEERING, INC.

## ABOUT People

The Sporlan Valve Co. announces the appointment of **Jack E. Dannels** to the newly created post of sales manager, OEM accounts. Dannels will move to St. Louis to take up his new duties. Former manager of Sporlan's Cincinnati office, he has been with the



Dannels



Rentschler

company since 1945 as a field sales engineer. In the same move, **Don B. Rentschler** will transfer to Cincinnati as district manager for that area. Rentschler formerly was a product sales manager for thermostatic expansion valves and refrigerant distributors in Sporlan's home office. He joined the company in 1953.

**Copeland Refrigeration Corp.** announces two appointments in its production department. **Edward J. Czarnecki** has been named production control manager and **J. Bernard Goodwin** will serve on the production staff, handling special assignments.

**Edward J. Pottner** has been appointed assistant treasurer of McQuay, Inc. Pottner formerly was chief accountant for the company.

**Amana Refrigeration, Inc.**, has appointed **Charles Stevenson** to fill a newly created job as national manager of Amana Plan merchandising. Stevenson, for the past two years, has been a regional sales manager based in Jackson, Miss. **G. W. Bartmess**, comptroller of Amana, has been named successor to Richard Averill as the firm's Miami regional sales manager.

**Wolverine Tube**, Div. of Calumet & Hecla, Inc., has appointed **Travis E. Mosier** sales representative. Mosier will service customers in the Chicago, Ill., metropolitan area, and will concentrate his selling efforts on the company's copper and aluminum tube products and aluminum extruded shapes.

The appointments of **David Kishbauch** as midwest district manager, **William Sullivan** as eastern district manager, and **William Gaske** as New England district manager, have been announced by American-Standard Air Conditioning Div. Kishbauch was appointed eastern district manager in 1956. Sullivan was in the New England territory



Sullivan



Gaske

until his present promotion. Gaske comes to American-Standard from Bryant Mfg. Co., where he had been sales manager for the oil products division.

Two new regional field sales managers have been appointed by Pittsburgh Corning Corp. **John H. Price, Jr.** will supervise the company's sales activities in the eastern section of the country. He will headquartered at the firm's Philadelphia, Pa. offices. **Edward**

**H. Martin, Jr.** will be located in the firm's Chicago, Ill. office where he will supervise sales activities in midwestern and western United States, as well as Canada.

**Square D Co.** has appointed **Mitchell P. Kartalia** general manager of the marketing division. Kartalia, who has been sales manager of Square D's distribution equipment division, will headquartered in Detroit. He joined Square D in 1940 as a sales application engineer and successively rose to various executive sales positions.

**Tenney Engineering, Inc.**, oldest manufacturer of environmental test chambers, has named **Saul S. Schiffman** as chairman of its board of directors. Schiffman also will continue as secretary-treasurer and chief financial officer of the company.

**Vernon D. Hauck** has been appointed general manager of Friez Instrument Div., Bendix Aviation Corp. Hauck joined Bendix in 1937, and for the past two years has served as assistant general manager under LeRoy D. Kiley who is retiring after 17 years of service.

**Jack Shnable** has been named west coast general sales manager for Controls Co. of America. In his position Shnable will be responsible for directing the selling efforts of all products manufactured by Controls Co. and its affiliates. He will be located at the company's plant in El Segundo, California.

**Silvercote Products, Inc.**, Chicago, Ill., has announced the election of **Richard K. Trask** as vice president and general sales manager. Trask will be responsible for sales of all product lines. He

# NEW *low cost* automatic ICE CUBE MAKER!



## *Crystal Tips*

new Model B-1 ice maker has the most outstanding sales potential of any ice maker developed in the last ten years!

New, small size . . . new low price . . . opens a big *NEW* market for automatic ice maker sales! That's what the Crystal Tips B-1 is designed to do. Thousands upon thousands of limited ice users are waiting for this low cost automatic ice maker. Strike it rich. Act now. You can begin selling this needed — this wanted ice maker right away. For advance information write or phone us *today*.

### World's most Complete Line of Automatic Ice Cube Maker.

Crystal Tips Model B-1 makes up to 45 pounds of cubes a day. Other fine models with Crystal Tips 2-in-1 feature (cubes or chips) make up to  $\frac{1}{4}$  ton a day. Step up your profits — join the big swing to Crystal Tips!

*First name and first choice in automatic ice makers*

**AMERICAN AUTOMATIC ICE MACHINE COMPANY**

1879 Park Ave., Faribault, Minn. • Phone FARibault 4-5501

In Canada: Frontier Commercial Refrigeration, Ltd.  
1470 The Queenway, Toronto 4, Ontario

*A Division of*  
McQuay, Inc.



**NOW, MORE THAN EVER, IT PAYS TO BE A CRYSTAL TIPS DISTRIBUTOR**

Circle No. 11 on Reader Service Card

joined the company in 1956 as manager of the industrial insulation division.

**Frank W. Jamieson** has been elected vice president of Viking Copper Tube Co. according to Bailey I. Ozer, president. Jamieson was appointed office manager in 1950. He was elected secretary in 1953, and appointed sales manager in 1954. He will headquartered at the company's offices in Cleveland, Ohio.

Appointments of eight sales engineers have been announced by Acme Industries, Inc. The men and their territories are: **A. G. Allen**, Dallas; **Thomas Davenport**, San Francisco; **Howard C. Washechek**, Milwaukee; **T. J. Waddell**, St. Louis; **Robert Kuhn** and **William K. Parks**, both Chicago; **John M. Burke**, Kansas City, Mo.; and **Dean W. Duston**, Houston, Tex.

**Fred J. Watt** has been appointed assistant to the president of Patterson-Kelley Co., Inc. In his new position, Watt will be responsible for original equipment sales of refrigeration and air-conditioning equipment plus the company's general line of heat exchangers. Watt joined Patterson-Kelley from Worthington Corp.

Pyle-National Co. has elected **Robert F. Dick** to its board of directors.

**Preston E. Cherry**, has been appointed sales director of United Refrigerator Co. For the past six years Cherry has been associated with Amana Refrigeration, Inc.,

Amana, Ia., first as western regional assistant sales manager and more recently as eastern regional sales manager.

**Robert Plazibat** has joined Trane Co. as a sales engineer of residential and self-contained air-conditioning equipment. Plazibat will work out of the company's sales office in Flint, Mich.

Fulton Sylphon Div., Robertshaw-Fulton Controls Co. has named **R. E. Fitzpatrick** district sales manager in Cleveland, Ohio. Fitzpatrick joined the organization in 1947. The Cleveland sales office serves Northern Ohio, Northern West Virginia, and Western Pennsylvania.

**Robert J. Travis** has been appointed a district representative in New York state for Timken Silent Automatic Products. From 1949 to this year Travis was vice president and treasurer of H. S. Travis, Inc., heating and cooling equipment distributors in Norwich, N.Y.

**A. S. Garven** has been named branch manager for the Air-conditioning Dept. of General Electric Co. in the New Jersey area. Other appointments include **Ian Dennis** as sales manager; and **Gordon Deso** as operations manager.

**Crawford Robertson** has been named eastern division sales manager of Continental Air Filters, Inc., with headquarters in New York.

Two new boiler sales engineers have been named by Cleaver-Brooks Co. **John F. Mahar**, will cover sections of New York State. **Robert Martin**, will handle Brooklyn, Queens, and Long Island, N.Y.

Square D Co. has appointed **Robert E. King** distribution equipment sales manager. He will be responsible for all distribution equipment sales programs. King joined Square D in 1947 and has served in various capacities.

Acme Industries, Inc., has appointed **Terrance W. McGuire** as central regional manager. Headquartered in Chicago, McGuire will serve the states of Colorado, North and South Dakota, Nebraska, Kansas, Missouri, Iowa, Minnesota, Wisconsin, Illinois, and Indiana.

**R. Douglas Hazen** has been named manager of the newly franchised Trane Co., Miami, Fla., sales office. Hazen has been associated with Trane in several sales capacities since 1950. Prior to this time, the Miami office has been a sub-office of the company's franchised Gainesville, Fla., office.

Two executive promotions in Carrier Corp. have been announced. **Walter H. Steitler**, president of Carrier-Houston Corp., a wholly-owned distributorship in Houston, Tex., moves to



Steitler

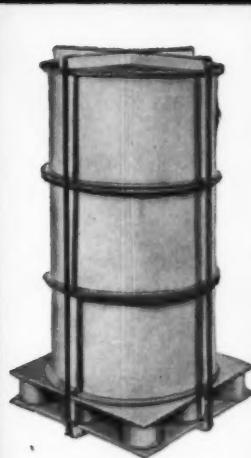
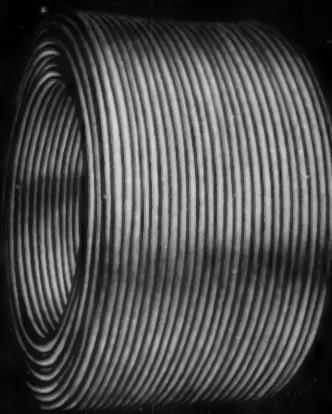


Egan

Carrier headquarters in Syracuse, N.Y., as assistant to the president. **William C. Egan**, sales manager of packaged equipment in the Unitary Equipment Div., transfers from Syracuse to Houston to succeed Steitler.

**BUY FROM YOUR  
REFRIGERATION WHOLESALER**

**To Meet a New  
Need In Industry...**



Reading Extra-Length Coils, wound on sturdy, disposable spools, are encased in protective walls and mounted and anchored to strong disposable pallets.

# READING Goes to **GREAT LENGTHS!**

To meet the needs of industrial organizations whose production processes involve high speed handling and continuous unattended feeding of copper tube, without danger of tangling or snarling—

**READING COPPER TUBE**  
(both Commercial and Small  
Precision Types) is now available in

## **EXTRA-LENGTH LEVEL-WOUND COILS**

in prepared lengths and in  
'special order' lengths

Reading Tube is also available, as always, in regular 'Pancake' and 'Double Pancake' Packaging and in standard, medium and extra long, bunch-type packaging.

**IN TUBING — Nothing Beats Copper —  
IN COPPER — Nothing Beats READING!**

## **READING TUBE CORPORATION**

Empire State Building, New York 1, N. Y.

Plant: Reading, Pa.

Distribution

Depots

READING, PA.  
WOODSIDE, L.I., N.Y.  
57-17 Northern Blvd.  
PHILADELPHIA, PA.  
921 Penn St.

CHICAGO, ILL.  
305 W. 31st St.  
CLEVELAND, OHIO  
4615 Perkins Ave.

ATLANTA, GA.  
690 Murphy Ave  
S.W., Unit 5, Bldg. B  
DENVER, COLO.  
2845 Walnut St.

OAKLAND, CALIF.  
410 Hegenberger Road  
LOS ANGELES, CALIF.  
120 No. Santa Fe Ave.

DALLAS, TEXAS  
5000 Sovereign Row  
Brook Hollow  
Industrial District  
HOUSTON, TEXAS  
1121 Rothwell St.

*Sold Through Wholesalers Only*

Circle No. 20 on Reader Service Card



## Real cool savings

The Volkswagen Panel Delivery gives you more usable, profitable space . . . 170 cu. ft., with a payload of 1830 lbs. You can install a complete shop inside for tools, parts, and test equipment. This saves time, money, and unnecessary trips. Plus: plenty of advertising space to promote your business.

Besides Volkswagen's roomy and practical design, outstanding gas economy, ease of handling and parking, its great popularity is based on its remarkably low maintenance. The engineered dependability of every Volkswagen is backed up by world-famous  service in all 49 states. When service is needed, every  owner gets the best. The investment in a Volkswagen Truck pays dividends. Real savings mile by mile add up year by year. Ask your authorized  dealer to show you the operating cost records for a Pick-up Truck, Panel Delivery, or a Kombi Station Wagon. A Volkswagen costs less to buy, run, and maintain.

**VOLKSWAGEN DELIVERS THE GOODS...FOR LESS!**



# VOLKSWAGEN

Circle No. 13 on Reader Service Card



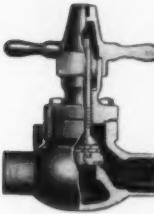
#### "Golden Bantam" Packless Valve—Type 516

A small packless line shut-off valve with  $\frac{1}{4}$ " thru  $\frac{3}{8}$ " flare, O.D.S. or extended end solder connections. Also "Blue Bantam" and "Standard" Balanced-Action packless line shut-off valves with  $\frac{1}{4}$ " thru  $\frac{3}{8}$ " Fl. and  $\frac{1}{4}$ " thru  $1\frac{1}{2}$ " O.D.S. size connections.



#### Cross-Vu® Hermetic Seal Liquid Indicator—Type LI-16

Brass indicator with glass fused directly to metal body. Maximum working pressure 500 P.S.I. Connection sizes:  $\frac{1}{4}$ " thru  $\frac{3}{8}$ " M.Fl., M.Fl. x F.Fl. or with extended ends and solder connections.



#### Wing Cap Packed Valves—Type 203

The standard of the industry. Bronze alloy with O.D.S. connections in sizes  $\frac{1}{8}$ " thru  $4\frac{1}{2}$ " (Globe) and  $\frac{1}{8}$ " thru  $3\frac{1}{2}$ " (Angle). Also semi-steel with  $\frac{1}{2}$ " thru  $2\frac{1}{2}$ " F.P.T. connections and semi-steel flanged type globe and angle valves with brass O.D.S. or steel butt-weld adapters, and one piece socket weld or F.P.T. flanges in a wide range of sizes from 1" to  $5\frac{1}{2}$ ".

**H E N R Y** for low installation cost



#### Angle Relief Valve—Type 52



ASME—NB—National Board Certified

Forged brass automatic pressure relief valve. Pressure setting range 50 to 450 P.S.I. Size connections: (M.P.T. Inlet x Flare Outlet)  $\frac{1}{4}$ " x  $\frac{1}{8}$ ",  $\frac{3}{8}$ " x  $\frac{1}{8}$ ",  $\frac{3}{8}$ " x  $\frac{1}{2}$ " and  $\frac{1}{2}$ " x  $\frac{1}{2}$ ". Also  $\frac{1}{2}$ " O.D.S. x  $\frac{1}{2}$ " O.D.S.



#### "DRI-COR" Filter-Drier—Type V800

Ceramic fired desiccant filter-core in bed of granular desiccant—a blend of molecular sieves and activated alumina. Provides high capacity drying even at relatively high temperatures, micronic filtration, efficient acid removal and low pressure drop. Pressure sealed. Wide range of sizes with  $\frac{1}{4}$ " thru  $\frac{3}{8}$ " Fl. connections. "DRI-COR" Filter-Drier Cartridges also available for Henry Cartridge Type Angle Driers.



#### "Y" Strainer—Type 895

Flanged design permits cleaning without removing strainer from line. Screen cylinders securely located by spring tension preventing by-passing of refrigerant. Forged brass end caps with integral end connections. Screen area: 10 thru 150 sq. in. Size connections:  $\frac{1}{2}$ " thru  $4\frac{1}{2}$ " O.D.S. Angle and straight-through type strainers also available.



Catalog 103  
Valves, Driers,  
Strainers and  
Accessories.



Catalog 202  
Ammonia  
Valves and  
Accessories.



Catalog FF  
Forged  
Carbon Steel  
Fittings.

Write for catalogs describing the complete line.

### H E N R Y V A L V E C O M P A N Y

Manufacturers of Valves, Driers, Strainers, Fittings and Accessories  
for Refrigeration, Air Conditioning and Industrial Applications.

3215 NORTH AVENUE, MELROSE PARK, ILLINOIS (Chicago Suburb)

CABLE: HEVALCO, MELROSE PARK, ILLINOIS

Circle No. 14 on Reader Service Card



# How to keep consistent temperatures and/or prevent condensation on warm or cold lines

*Send for free Bulletin*



Rubatex Tubing can be slipped onto piping before it's installed on air conditioning unit or system.



Flexible tubing can be easily installed onto piping with swings and bends up to 180°.



Slit tubing with adhesive applied fits snugly onto joint.



Complete data, applications and specifications on RUBATEX Closed Cellular Tubing Insulation—specially developed tubing for OEM, commercial, industrial and residential heating and cooling lines, chilled water and other cold lines where service conditions are moderate.

**RUBATEX DIVISION, Dept. CR-14**  
**GREAT AMERICAN INDUSTRIES, INC.**  
**Bedford, Virginia**

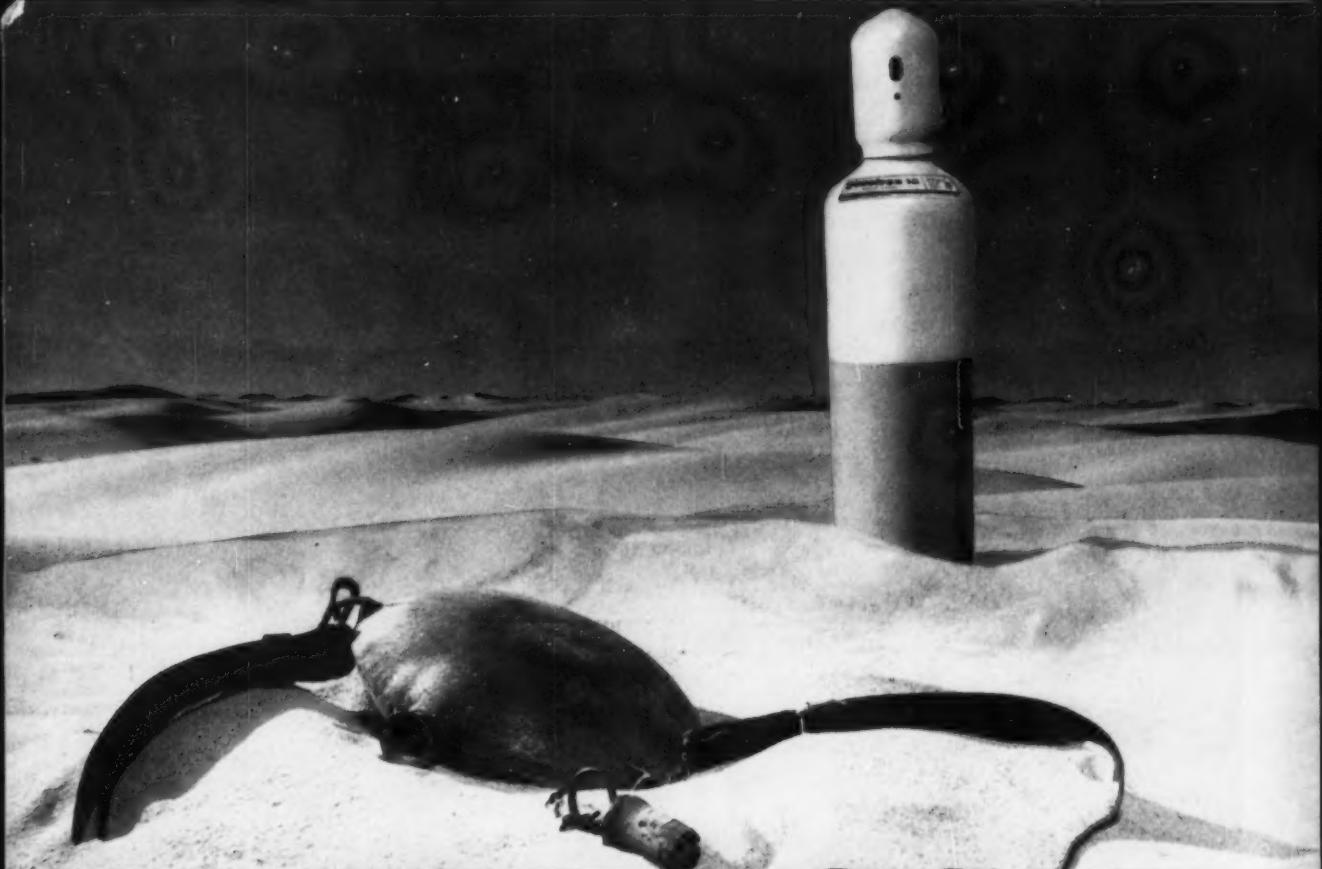


Name   
Type of Business

Proposed Application

Attach to your letterhead and mail this coupon for your copy of new Rubatex Tubing Bulletin today!

Circle No. 35 on Reader Service Card



# DRYNESS

*best reason in the world for using*

**genetron<sup>®</sup>**  
**SUPER-DRY**  
**REFRIGERANTS**

"Genetron" Refrigerants are the ultimate in dryness. In "Genetron" 12, for example, there is less than one-thousandth of one percent of moisture! And the tight specifications for "Genetrons" are consistently *bettered* in production. That's why smart service engineers everywhere are insisting on Super-Dry "Genetrons."

Service? No matter where you are there's a "Genetron" wholesaler as near as your telephone. Make your next order—"Genetron."

**QUICK FACTS on GENETRON  
Super-Dry Refrigerants**

- Guaranteed exceptionally low moisture content.
- Noncorrosive to standard equipment materials, nontoxic, nonflammable, stable, safe.
- Critical and freezing points well outside range of operating uses.
- Solvent action on oil helps prevent solidification or congealing of lubricant; aids in lubrication of equipment; generally miscible with oil.
- Freely interchangeable and may be mixed in any proportions with comparable fluorinated

hydrocarbons meeting the same strict refrigerant specifications.

•Available everywhere, from refrigeration wholesalers throughout the country.

**GENETRON 11 ORANGE LABEL**  $CCl_3F$   
Trichloromonofluoromethane

**GENETRON 12 WHITE LABEL**  $CCl_2F_2$   
Dichlorodifluoromethane

**GENETRON 22 GREEN LABEL**  $CHClF_2$   
Monochlorodifluoromethane

**GENETRON 113 PURPLE LABEL**  $C_2Cl_3F_3$   
Trichlorotrifluoroethane

**GENETRON 114a BLUE LABEL**  $C_2Cl_2F_4$   
Dichlorotetrafluoroethane



**GENERAL CHEMICAL DIVISION**

40 Rector Street, New York 6, N.Y.



*Birds Eye Zero-Storage Warehouse at Walla Walla, Washington*

## **Styrofoam® cuts installation costs 10% at Birds Eye**

After careful study, Styrofoam was chosen to insulate the floors, ceilings and walls of a zero-storage warehouse for Birds Eye Division of General Foods.

Over 500,000 board feet of Styrofoam were used. The choice of this insulation material resulted in a 10% savings in installation costs and, thus far, the complete absence of any vapor problems. Tests conducted by Birds Eye revealed that Styrofoam will preserve their food products for 48 hours after the ammonia has stopped circulating and that Styrofoam will insulate the ground from freezing for four to six weeks after the subfloor heating is turned off.

This is just one example of the many cold storage applications in which Styrofoam has provided economical and effective insulation. Because it has low heat transmission and unyielding resistance to moisture, Styrofoam has permanent insulation efficiency. Because it is lightweight, self-supporting and flexible, it offers advantages in handling and installation. This was demonstrated at Birds Eye by the fact that Styrofoam was readily contoured to the curvature of the roof.

For more information about Styrofoam\* (a Dow plastic foam), contact the nearest Styrofoam distributor, or write to us. THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Department 1909BB.

\*STYROFOAM is a registered trademark of The Dow Chemical Company

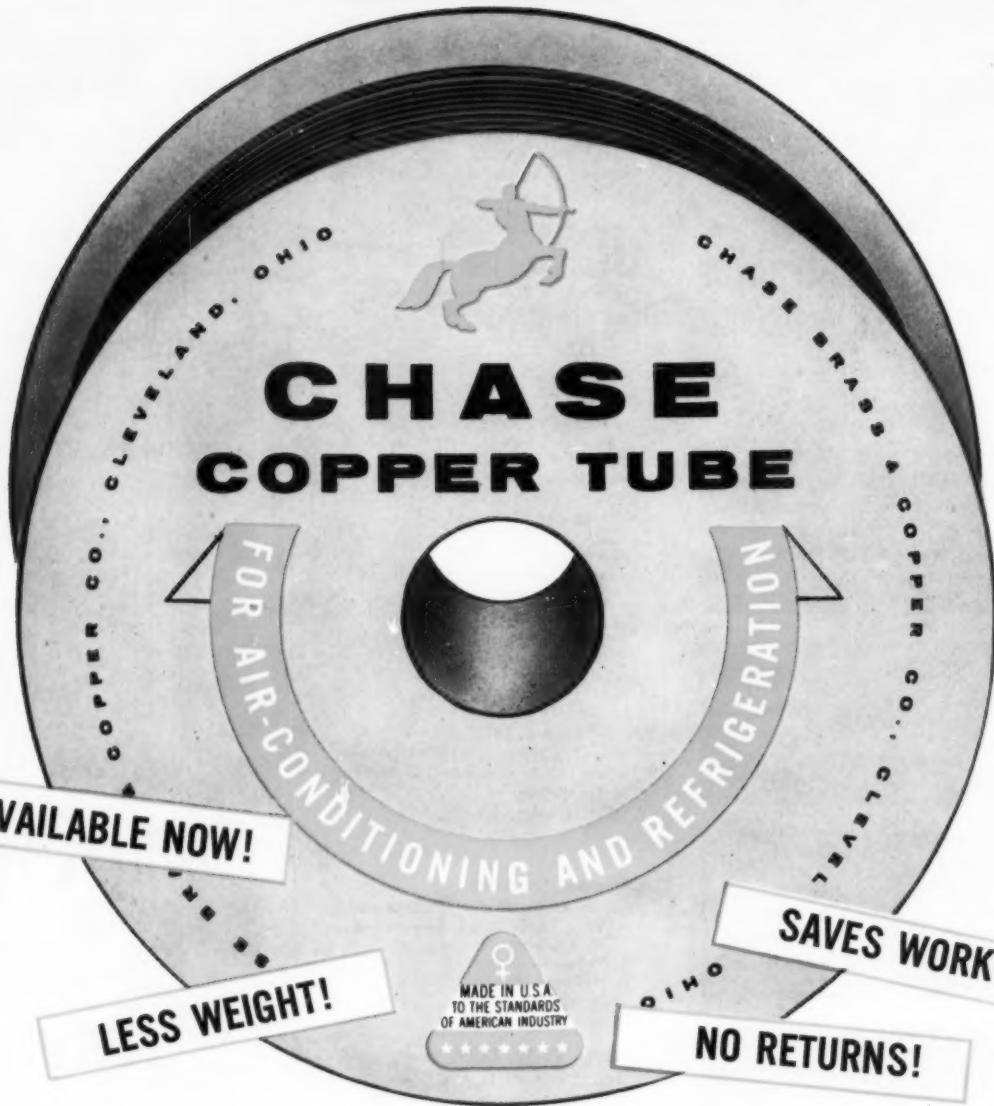
**YOU CAN DEPEND ON**



Circle No. 76 on Reader Service Card



# NEW CHASE®



## DISPOSABLE REELS FOR COPPER TUBING INTRODUCED BY CHASE

WATERBURY, Conn.—Disposable cardboard reels holding copper tube for air-conditioning and refrigeration uses are now available for the first time. The new lightweight reels, introduced by Chase Brass & Copper Company, offer many advantages in economy, ease of handling, and added protection of tube.

Less than one-tenth the weight of con-

ventional steel reels, the cardboard reels eliminate many of the problems and expenses associated with the metal units, according to Chase. Purchasers of copper tube no longer have to perform the book-keeping involved in accounting for the reels and the required deposits on their return. Also eliminated are the time and labor of handling the empty reels, storing

them prior to shipment, and then shipping them back.

The new lightweight, disposable reels are presently being used for those tube sizes most commonly used in the air-conditioning and refrigeration industries. According to Chase, other sizes will soon be available on cardboard reels.

Circle No. 18 on Reader Service Card

# THROW-AWAY REEL

## holds up to 3,000 feet of Copper Tube for refrigeration and air-conditioning

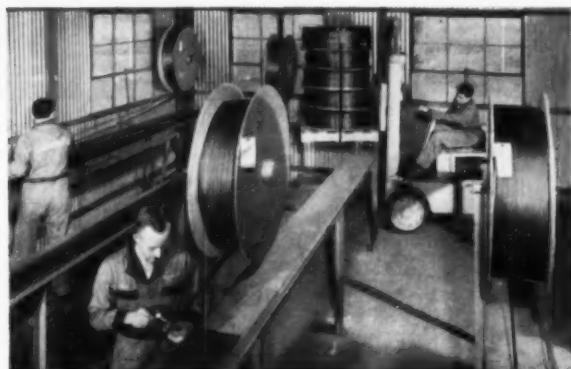
Now you can get the most popular sizes of Chase Copper Tube for air-conditioning and refrigeration use—packed on the exclusive new disposable reel developed by Chase. And look what this means to you in never-before-available savings!

Less than a tenth the weight of steel reels used by others, the new Chase disposable reel eliminates return problems, does away with bookkeeping required to keep track of reels. No more time and labor handling and storing empties—just throw the Chase reel away!

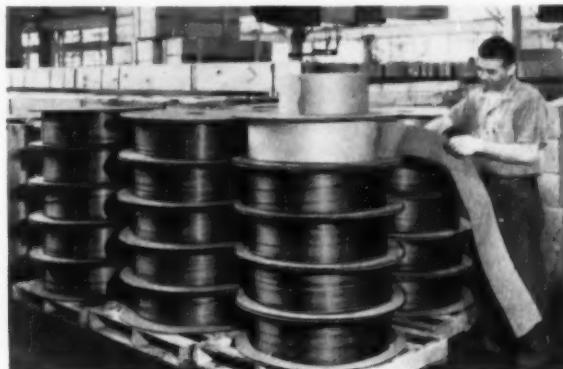
In use, Chase Copper Tube on these new reels

saves you time, too. Long, continuous, non-welded lengths of tube—up to 3,000 feet—allow maximum production, end lost time caused by threading or joining shorter lengths. Scrap is reduced to a minimum. And you get perfect inventory control because there's no need to stock a variety of specific lengths of tube!

Ask your nearest Chase Representative to supply your next order of Chase Copper Tube for refrigeration and air-conditioning on the new, handy throw-away reel. Or write for more information to Chase Headquarters at Waterbury 20, Connecticut.



**LONG CONTINUOUS** coils of Chase Copper Tube paying out from new disposable reels on production lines at an air conditioning equipment manufacturing plant.



**NEARLY THREE MILES** of tube make up this single pallet load—and there are no bulky reels to keep track of, store and return. Another Chase economy!

**Chase**   
BRASS & COPPER CO.  
WATERBURY 20, CONN.  
Subsidiary of  
**Kennecott Copper Corporation**

*The Nation's Headquarters for Brass, Copper and Stainless Steel*

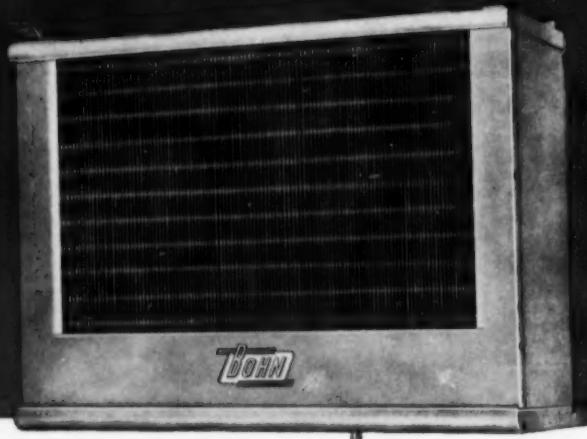
Atlanta Baltimore Boston Charlotte Chicago Cincinnati Cleveland Dallas Denver Detroit Grand Rapids Houston Indianapolis Kansas City, Mo. Los Angeles Milwaukee Minneapolis Newark New Orleans New York (Maspeth, L.I.) Philadelphia Pittsburgh Providence Rochester St. Louis San Francisco Seattle Waterbury

Circle No. 18 on Reader Service Card

*Don't Get Your  
Connections Crossed...*



## CUT INSTALLATION TIME



**BOHN** MODEL LC for large walk-ins

**BOHN "LC"**  
**Lo-Temp**  
**Unit . . .**

**Only 4 Connections to Make!**

INSTALLATION of the Bohn Model LC Cooling Unit in large walk-in freezers and low temperature storage rooms requires only four connections: liquid, suction, drain, and electricity. Wiring is simple with a clearly marked diagram on the inside of the terminal box cover. Save on installation and get this

trouble-free unit of guaranteed capacity and proven quality...

**WITH COMPLETE DEFROST  
SYSTEM BUILT-IN**

Electrically heated vapor circulates by gravity through the coil in its own hermetically sealed circuit . . . completely independent of the refrigeration circuit. The

entire Vapor Hermetic Defrost Cycle is automatic . . . beginning at any predetermined time, ending when the frost is gone, and automatically adjusting to heavy or light frost loads. In 5 models with capacities from 6,000 to 24,000 BTU's per hour at 10° T. D. Write for Bulletin LT-1001.

# BOHN

*Buy the known line...the Bohn line*

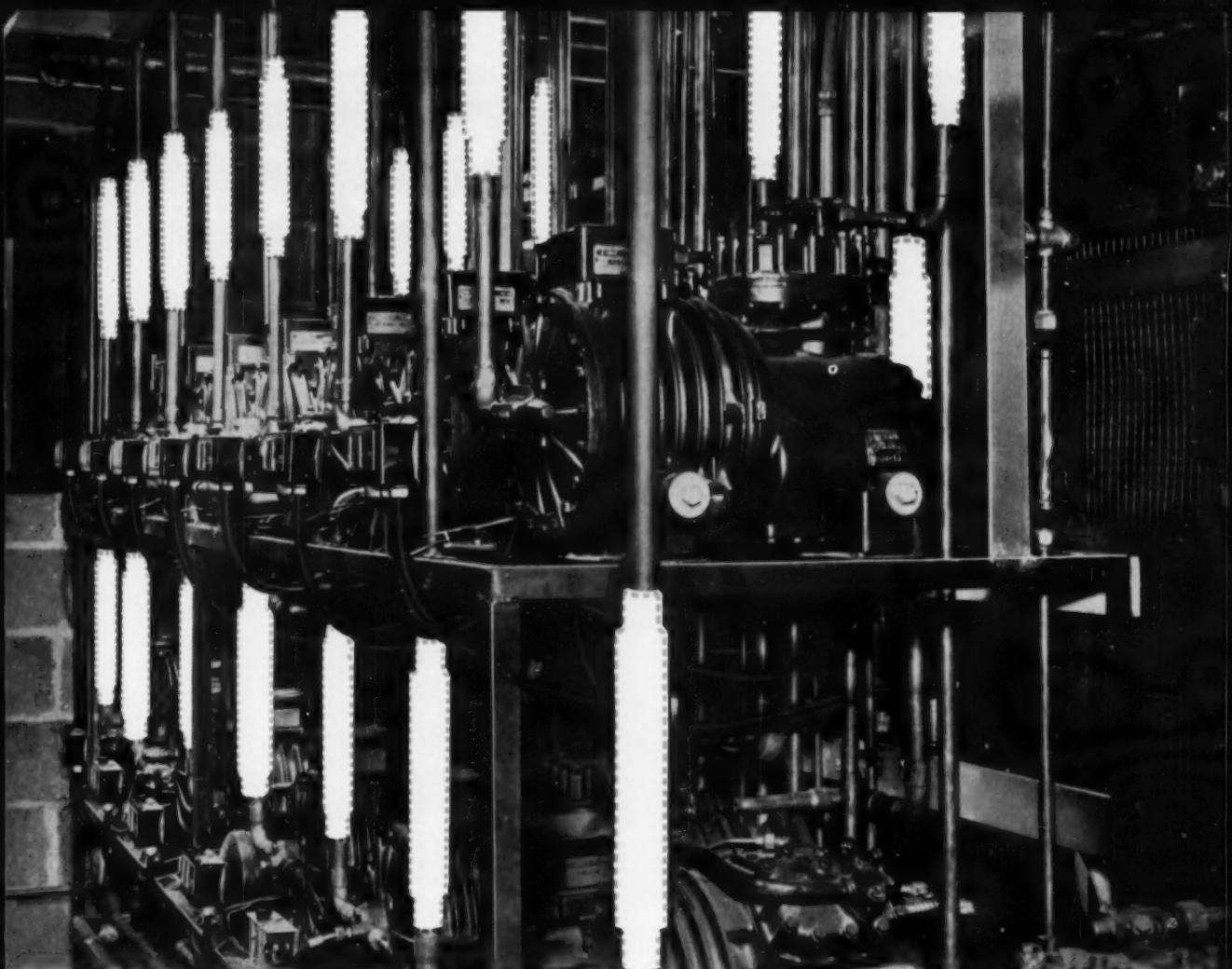
*Refrigeration and Air Conditioning Products • Special Heat Transfer Surfaces*

**Aluminum and Brass Corporation**

Betz Division • Danville, Illinois

Circle No. 19 on Reader Service Card





## How would you complete this picture—to protect your customers from serious losses in perishables?

Vibration can cause cracked tubing and loss of refrigeration. The refrigerant charge costs plenty—frozen or fresh perishables being stored cost a lot more—and your reputation is more valuable still.

So no job like this is complete without American Vibration Eliminators\*, which absorb vibration, dampen noise, and prevent cracked piping. That means satisfied customers. It means satisfied contractors, too—because *your* profits are protected. American Vibration Eliminators are inexpensive business insurance. See your Anaconda distributor.

### You can use American VE's with confidence because . . .

**THE BASIC METAL'S RIGHT** — It's a special tin-bronze alloy. Of scores of copper-base alloys, this one was selected because of its capacity to withstand the punishment of long periods of vibration. The outer wire braiding which adds strength and durability to the VE is also made of tin-bronze.

**THEY'RE MANUFACTURED RIGHT** — Every step in manufacturing is under close quality control supervision. Seven distinct finishing and cleaning operations result in a product free of dust, dirt or foreign particles. Each VE gets a nitrogen-under-water test to assure freedom from leaks.

### VE's arrive clean, ready to use—

They're sealed in polyethylene envelopes—packed in sturdy, easily identified boxes. When you open the package, your quality VE's are factory-fresh—clean inside and out—ready to install in the lines.

\*Trade Mark 58214

Listed by Underwriters' Laboratories through sizes 3 $\frac{1}{2}$ " O.D. For descriptive folder write: The American Brass Co., American Metal Hose Division, Waterbury 20, Conn. In Canada: The Canadian Fairbanks-Morse Co., Ltd.



**AMERICAN**  
VIBRATION ELIMINATORS

An **ANACONDA**® product

# Extra protection features for Jamison super freezer doors



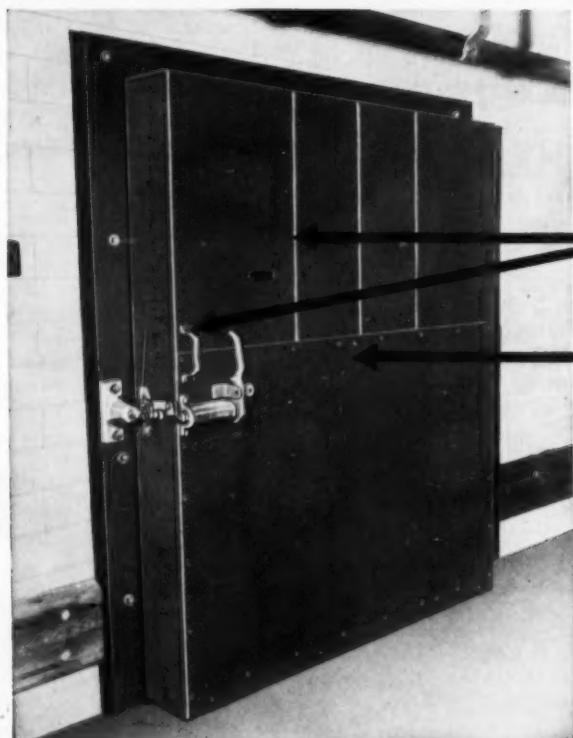
batten doors and vestibule save refrigeration

metal cladding on frame and back of door for protection from vapor and moisture

exclusive Jamison Vap-r-tyt\* construction for protection against vapor penetration, has locked and soldered seams and sealed bolt holes

metal kick plate 48" high on frame and inside and outside of door for protection against bumping and abuse

\*Vap-r-tyt is a Jamison trademark



**JAMISON**  
COLD STORAGE DOORS  
HAGERSTOWN, MARYLAND, U. S. A.

Circle No. 38 on Reader Service Card

# Only Halstead & Mitchell offers a cooling tower with a 20-YEAR GUARANTEE

ON THE WETTED DECK  
AGAINST FAILURE  
DUE TO ROTTING  
OR FUNGUS ATTACK



Here's why this is important: Fungus growth on cooling tower wood fill very often can accumulate to the extent that it actually obstructs air flow through the tower. This reduces tower capacity and affects performance of the refrigeration or air conditioning equipment involved. In severe cases, the wood will rot and cause tower failure.

**Treated Deckings**—For positive protection against such harmful effects, Halstead & Mitchell subjects the wood deck material used in all H&M cooling towers to a special, pressure creosote treatment. That's why *only* Halstead & Mitchell offers a 20-Year Guarantee on the wetted deck against failure due to rotting or attack by fungus. Original tower capacity is maintained, and that reliability is what cooling tower purchasers need.

**Anti-Corrosion, Plastic Coatings**—Halstead & Mitchell Cooling Towers have many other design features that increase tower life and keep maintenance costs to a minimum. For instance, the cooling tower casings are completely protected against corrosion by separate plastic coatings of Vinsynite, Vinyl Zinc Chromate, and chlorinated rubber, *after assembly*. Every edge, every corner, is sealed against rust.

**Permanently Sealed Bearings**—Another example, fan bearings are permanently lubricated and sealed. Damaging moisture is kept out. Maintenance and periodic greasing are eliminated.

H&M Cooling Towers are available in capacities of 2 thru 125 tons. Types include propeller fan, centrifugal fan and take-apart models. See your local wholesaler, or write for more information. Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.



COOLING TOWERS • WATER-COOLED CONDENSERS  
AIR-COOLED CONDENSERS • FINNED COILS

THE MUELLER BRASS CO. ALL NEW

# Sightmaster

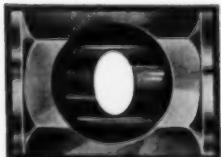


## THE MOST VERSATILE EASY-TO-READ LIQUID INDICATOR YOU CAN BUY

Now you can get a Liquid Indicator loaded with deluxe features at an economy price. The versatile new Sightmaster is exceptionally rugged and has withstood test pressures over 500 p.s.i. . . . far exceeding normal operating conditions. The spring compensated "O" rings maintain a constant leakproof seal, and automatically adjust to any variation of temperature or pressure . . . it just can't leak. Straight-thru design eliminates pressure drop. Sightmaster incorporates a positive light refraction method of reading . . . there are no moving parts or fragile devices to get out of adjustment. Write today for additional information and see Sightmaster's outstanding features for yourself at your wholesaler's.

get a positive reading at  
a glance with *Sightmaster*

Position of the oval image in the port indicates refrigerant supply. If the oval is at a right angle to the flow, the system is fully charged. If it's parallel to the flow, the refrigerant supply is low.



FULL



EMPTY

the right combination  
for any situation with  
minimum parts to stock

2

bodies  
and

3



types of fittings in  
1/4", 3/8" and 1/2" sizes  
give you

27



different size style  
combinations

**MUELLER BRASS CO.**

PORT HURON 14, MICHIGAN

Circle No. 23 on Reader Service Card





## Break the **BARRIER** and close the sale



A service offered through subsidiaries of Commercial Credit Company, Baltimore . . . Capital and Surplus over \$200,000,000 . . . offices in principal cities of the United States and Canada

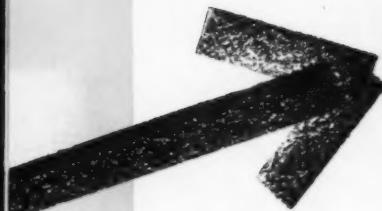
Most of your prospects need their cash reserves and usual lines of credit for current operations. Break through this financial barrier. Make it easier for the prospect to sign on the dotted line by including financing arrangements. COMMERCIAL CREDIT's Refrigeration Plan is backed by many years' experience in your industry—experience in handling financing for thousands of commercial refrigeration and air conditioning installations.

Let us show you how COMMERCIAL CREDIT experience and know-how saves you time and money . . . and helps you close sales with less delay. Call the nearest COMMERCIAL CREDIT office or write COMMERCIAL CREDIT CORPORATION, 300 St. Paul Place, Baltimore 2, Md.

**Make your proposals complete . . . include financing with COMMERCIAL CREDIT PLAN**

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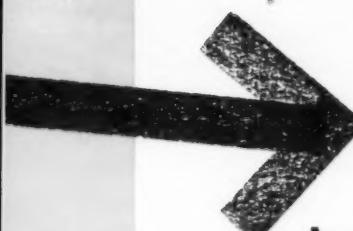




# Coming soon...

# Ucon

BRAND



# refrigerants

## Important News For the Refrigeration and Air Conditioning Industries ...

### **UCON Refrigerants will be dry, pure, top quality**

With UCON Refrigerants you will get quality that meets the highest industry standards. And you can choose from five grades, UCON 11-12-22-113-114.

But you'll get more. Much more.

**Personal Service** from technically trained representatives. The UCON Refrigerants service force is the largest in the United States.

**Full Choice of Unit Sizes** to meet your needs. UCON Refrigerants will be available in 10, 25, 145 lb., or ton cylinders; truck-tank or tank-car quantities.

**Prompt Delivery** from the largest network of distribution points serving America's refrigeration and air conditioning industries.

America's newest fluorocarbon plant will bring you a UCON Refrigerant for your air conditioning and refrigeration application. And there are new, exciting developments, soon to come. For full data write UCON Refrigerants, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, New York.

"Ucon" and "Union Carbide" are registered trade marks of Union Carbide Corporation.



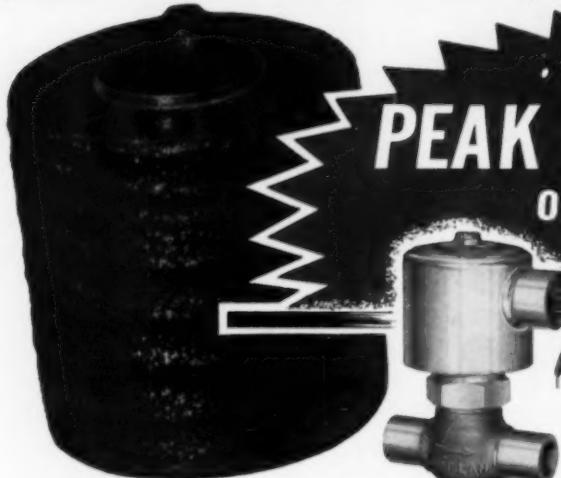
These 5 UCON Brand Refrigerants will meet your refrigeration and air conditioning needs

UCON Refrigerant 11 Trichloromonofluoromethane  
UCON Refrigerant 12 Dichlorodifluoromethane  
UCON Refrigerant 22 Monochlorodifluoromethane  
UCON Refrigerant 113 Trichlorotrifluoroethane  
UCON Refrigerant 114 Dichlorotetrafluoroethane

**UNION CARBIDE CHEMICALS COMPANY** Division of Union Carbide Corporation  
Circle No. 25 on Reader Service Card

**Every SPORLAN Solenoid Valve  
is POWER PACKED with the famous**

# *Blue Seal Coil*



...to give you  
**PEAK PERFORMANCE**  
on Every Installation



**No** matter what the refrigerant, or job size...whether it's a water, or hot gas application ...there's a Sporlan Solenoid Valve with the Famous Blue Seal Coil, that gives you that extra protection against burn outs, insulation and moisture failures, plus the time tested Sporlan design that makes Peak Performance a reality every time you install one!

**So** ... get the best, every time ... buy Sporlan Peak Performance Solenoid Valves for your very next job. They're Power Packed with the Famous Blue Seal Coil!

Include Sporlan Catch-Alls, See-Alls, Thermostatic Expansion Valves and Distributors with your Solenoid Valve order ...

*Get Peak Performance*

*Right Down the Line!*

Your Sporlan Wholesaler has literature on all Sporlan Products... Be sure to ask him for Bulletin 30-10

**SPORLAN** VALVE COMPANY



7525 SUSSEX AVE. ST. LOUIS 17, MO.

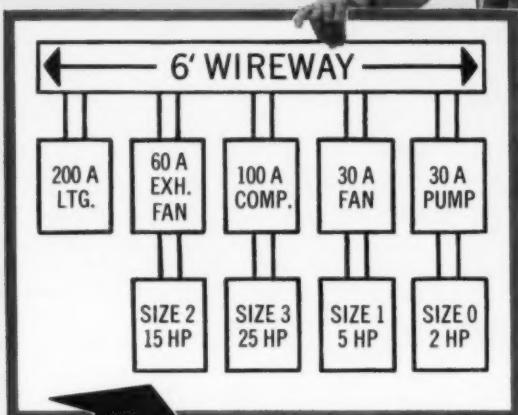
EXPORT DEPT. 85 BROAD STREET, NEW YORK 4, N. Y.

Circle No. 26 on Reader Service Card

REFRIGERATION & AIR-CONDITIONING

# STARTERS IN QMB PANELBOARDS!

ANOTHER SQUARE D FIRST!



IT TAKES  
**41 HOURS AND 6 FEET**  
OF WALL SPACE TO INSTALL  
AND WIRE SWITCHES  
AND STARTERS LIKE THIS

IT TAKES  
**12 HOURS AND 30 INCHES**  
OF WALL SPACE FOR THE  
SAME INSTALLATION WITH A  
QMB STARTER PANELBOARD



Notice how the plug-in switch unit is mounted directly above the starter, permitting interlocking. The starter cannot be opened when the switch is in the "ON" position.

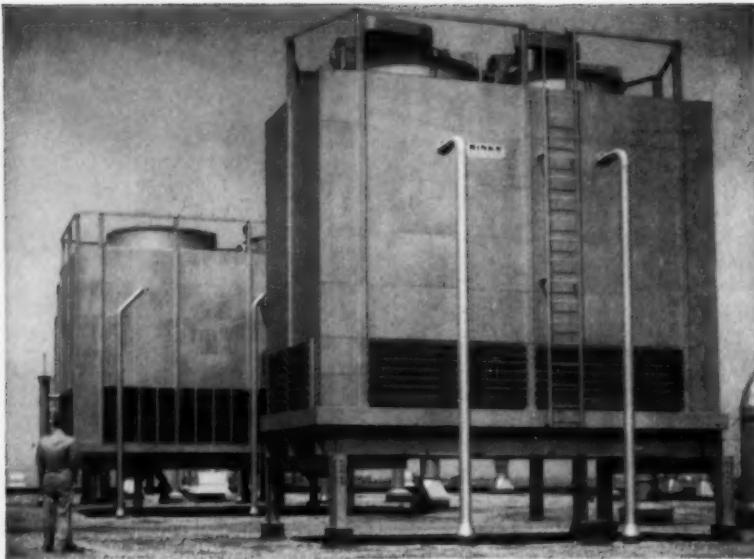
It's easy to order these starter and switch units. See Page 57 in your Square D Digest and order from your distributor.



EC&M HEAVY INDUSTRY ELECTRICAL EQUIPMENT...NOW A PART OF THE SQUARE D LINE

**SQUARE D COMPANY**

Circle No. 27 on Reader Service Card



At the new Caterpillar Tractor plant in Decatur, Illinois, four Binks 2-K Series cooling towers play important roles in the manufacturing processes.

at Caterpillar's Decatur plant

## Binks towers keep heat treating under cool control

The tough muscles of steel that make "Cat" motor graders and wheel tractors dependable work horses are no accident. All vital parts go through scientifically controlled heat treat processes.

Binks cooling towers play an important part in this process by controlling the temperature of quenching oils and water. They are also used to cool water that circulates to cool bearings in the electric induction heat treat furnaces.

Failure of the cooling equipment could be costly.

### Dependability you can count on

Binks cooling towers are built to rigid specifications. All panels and framework are heavily galvanized and coated for long life and minimum maintenance. Fans are cor-

rosion-resistant aluminum alloy. Scientifically balanced air-to-water ratios give high cooling efficiency under all climatic conditions.

### A complete line

Whether it is for cooling process fluids or for use with air conditioning compressors, there's a Binks cooling tower, of the correct capacity and type for every job.

### Send for complete data

Ask your Binks branch office for a copy of Bulletin 333 and Bulletin 477-A or write direct to the address below. Binks engineers will be glad to answer your questions and help you solve your cooling problems. There's no obligation.



A COMPLETE LINE OF NATURAL DRAFT AND MECHANICAL DRAFT COOLING TOWERS AND INDUSTRIAL SPRAY NOZZLES

**Binks Manufacturing Company**

3134-38 Carroll Ave., Chicago 12, Ill.

**Binks**  
EVERYTHING FOR  
WATER COOLING

REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED



DIRECTORY

Circle No. 28 on Reader Service Card

*as we see it...*

by Jim McCallum

**Make people conscious of** how hot it's getting, if you want to sell auto air-conditioners. That's the theory of Orville Stufflebeam, who operates Automotive Air Conditioning Co. in Phoenix, Ariz.

To cash in on this theory, he sponsored an 8-week contest early last season to predict the exact date and time that local temperature would hit 108 F.

The program was promoted daily over radio station KRUX. Official entry blanks were distributed through more than 200 dealers.

The critical temperature was officially recorded at 1:55 p.m. on May 27. More than 17,000 estimates were tabulated to select the contest winner.

The prize — naturally — was an auto air-conditioner.

Stimulated by this contest, sales for the season have more than doubled those for the same period of 1957.

*(For more ideas on selling and installing auto air-conditioners turn to page 48.)*

\* \* \*

**Have you had** a significant business anniversary lately? And if so, have you fully capitalized on its promotional value?

What brings this to mind is a copy of an 8-page brochure, attractively printed in two colors, that we recently received. It announces the fact that McCombs Supply Co., refrigeration and air-conditioning wholesaler of Denver, Colo., is celebrating its 20th anniversary this year.

The booklet leads off with a picture of Harold McCombs, president and general manager of the firm, and a statement by him. Other pages of pictures show the people who work for McCombs, the company's progress through a succession of business establishments, and the various facilities of its present headquarters.

No, we can't prove to you in dollars and cents just how much

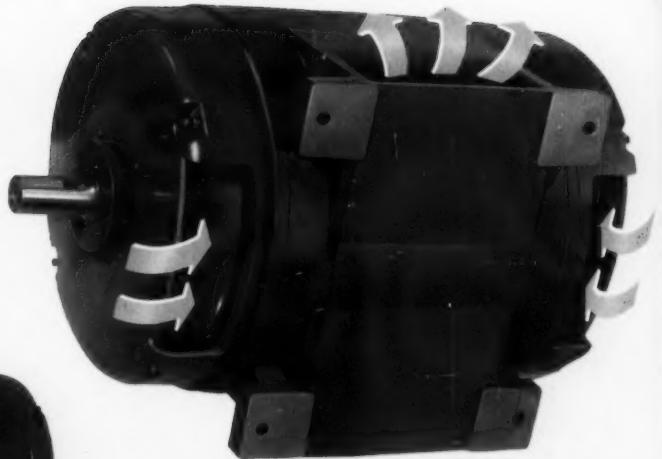
Circle No. 29



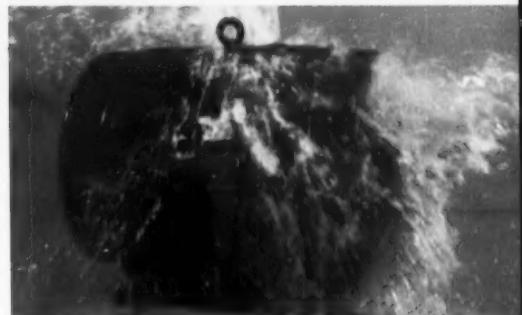
YOU GET  
**DOUBLE PROTECTION**  
against corrosion...  
against falling  
or splashing liquids



**TYPE DP**  
1 to 125 hp



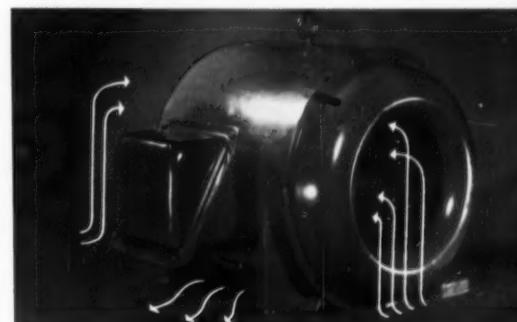
Air intakes and outlets are positioned to provide complete dripproof protection.



**DOUBLY PROTECTED**—Wagner DP Motors offer the double protection of completely dripproof enclosures and rugged cast iron frames that can take rough handling and resist corrosion.



**CAN BE RELUBRICATED**—Factory lubrication will last for many years in normal service—but openings are provided to permit the relubrication that adds years to motor life under severe conditions.



**COOL RUNNING**—Specially designed baffles direct cooling air through the motor to reduce stator temperature—thus increasing motor life. Blowers, cast as part of the rotor, move large volumes of air without noise or vibration.

**with WAGNER**  
**TYPE DP MOTORS**  
**designed to meet more**  
**application needs**

Wagner Type DP Motors offer the *double protection* of rugged corrosion-resistant cast iron frames and dripproof enclosures so well designed that the DP Motor can handle many applications that formerly required splashproof motors.

These Wagner Motors are built in the new NEMA ratings that pack more power in less space, are lighter in weight and are easier to maintain.

**SLEEVE BEARING MODELS AVAILABLE**

The entire line of ratings through 125 hp is available with ball bearing construction as illustrated, or with steel-backed, babbitt lined sleeve bearings that have high load carrying capacity and provide quieter operation.

Let a Wagner Sales Engineer show you how these motors can be applied to your needs. Call the nearest branch office or write for Wagner Bulletin MU-223.

**1 to 125 HP—1750 RPM—40°C**  
**NEMA FRAMES 182 through 445U**

**Wagner Electric Corporation**  
6400 Plymouth Ave., St. Louis 14, Missouri.

YOU GET  
**EXTRA PROTECTION**  
against corrosive...  
abrasive or  
explosive elements



## with Wagner totally enclosed motors... protected for longer motor life

If you need motors that will keep production rates up... that will give the continuity of service that is so important to automation... that will operate with complete dependability under the most severe conditions—Wagner totally-enclosed motors are your soundest choice.

Type EP Motors offer protection against corrosion, dust, abrasives, fumes, steel chips or filings. Type JP is explosion proof as well—designed and approved for use in explosive atmospheres.

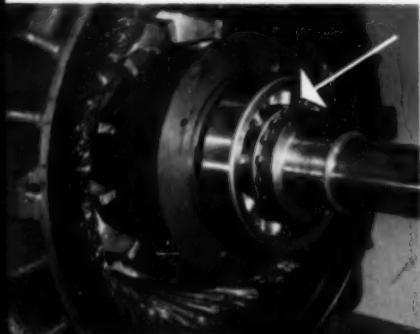
**1 TO 100 HORSEPOWER—4 POLE, 60 CYCLE—NEMA FRAMES 182 THROUGH 445U**

### Wagner Electric Corporation

6400 Plymouth Ave., St. Louis 14, Missouri. Branches and Distributors in All Principal Cities

#### HEAVY DUTY BALL BEARINGS

The ball bearings used in these motors are of the highest quality, with more than ample capacity to provide long troublefree service under heavy loads.



#### BEARINGS CAN BE RELUBRICATED

Factory lubrication will last for many years under normal service, but openings are provided to permit relubrication that adds years to motor life under severe conditions.



#### SEALS KEEP BEARINGS CLEAN

Both ends of these motors have running shaft seals to keep the bearings clean. Bearing housings are effectively sealed to prevent escape of grease.



added volume this booklet will bring to Harold McCombs, but we'll wager that it goes a long way toward impressing his customers — and prospects — with the fact that here is a sound and established firm from which they can buy in complete confidence.

As this industry grows older, and more stable, there will be more and more dealers, distributors, contractors, wholesalers, and service organizations that have been in business 5, 10, 15, or 20 years. Why not make your next major anniversary pay dividends through proper promotion?

\* \* \*

**Practical answers** to common questions can help sell home air-conditioning.

With this thought in mind, Wisconsin Electric Power Co. used large space newspaper advertising to publish pointers on "How to select an air conditioner". Here are some of the questions asked — and answered — in that ad:

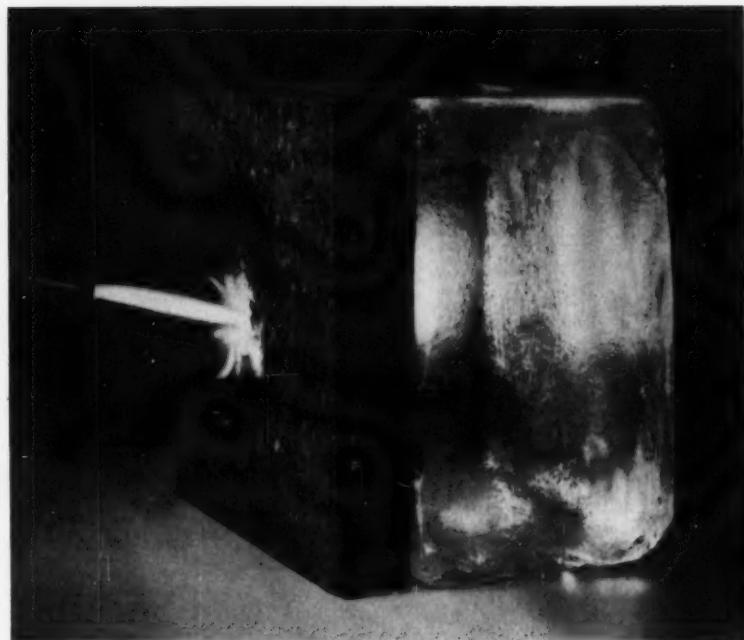
How are air-conditioners rated? What do these ratings mean? What do you look for in buying a room air-conditioner? What benefits do you get? Should you buy a unit with thermostatic control? Does a room unit require special wiring? Can you install a room air-conditioner yourself? Is it a big job to install central air-conditioning in an older house?

The ad urges readers to take this checklist with them when they shop for air-conditioning, and to have a dealer survey the home to determine its requirements.

*(This is one way in which electric utilities can and do help promote air-conditioning. For other ideas along this line read the article beginning on page 44 of this issue.)*

#### AEROQUIP OPENS NEW DALLAS, TEX., PLANT

A new 10,000-sq.ft. manufacturing plant has been put into operation in Dallas, Tex., by Aeroquip Corp. The new plant, located at 9105 Sovereign Row, will serve both the industrial and aircraft markets. The plant has complete facilities for assembly, proof test, and inspection of hose assemblies.



## Why United's patented process results in corkboard of higher insulating value

Cork in its natural state is well known and highly regarded as an excellent insulating material. However, by an exclusive blocked-baked patented process that combines both external and internal heat in the moulding operation, United BB Corkboard is unsurpassed in insulating value.

Further, United Corkboard is 100% cork . . . with no filler added, and, its high strength in relation to light weight permits a sturdy self-supporting structure that is simple to erect. It's flexible too . . . fits accurately, works as easily as lumber and the natural resins released during processing further add to its excellent moisture resistant characteristics.

The next time you have a need for low temperature insulation investigate the unique combination of benefits only "patented process" United Corkboard can provide.

Write today for specifications and helpful installation data. No obligation.



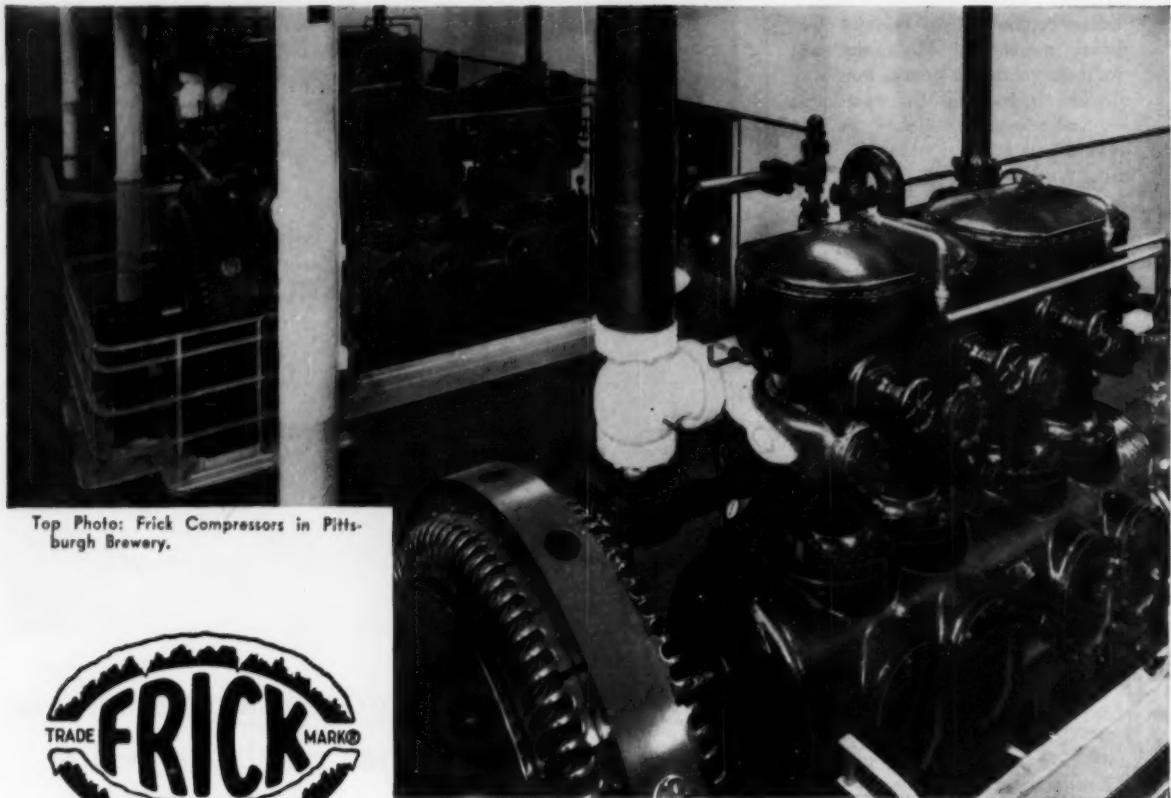
### UNITED CORK COMPANIES

Since 1907

7 Central Avenue, Kearny, New Jersey

**ENGINEERING AND INSTALLATION SERVICE —**  
to meet your individual requirement . . . insure the most effective use and provide proper installation, United maintains fifteen branches throughout the country, staffed with experienced engineers and installation crews. For the one nearest you simply write our Kearny address.

Circle No. 30 on Reader Service Card



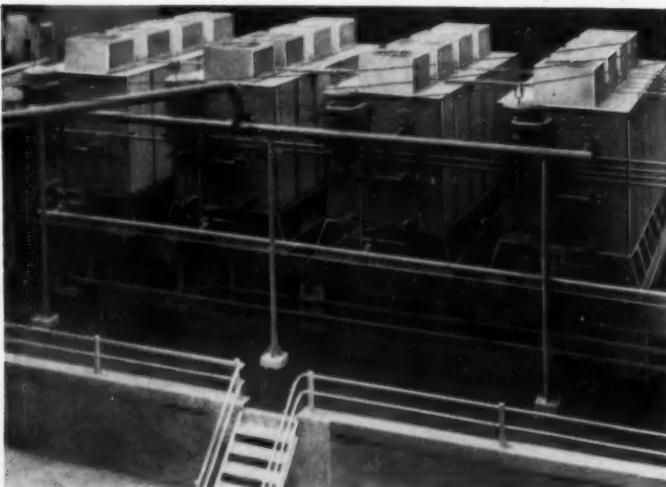
Top Photo: Frick Compressors in Pittsburgh Brewery.



## means SATISFACTION

In 1948 the Pittsburgh (Penns.) Brewing Company installed two 14 by 12 Frick compressors. Since the initial order, the Company has added other Frick equipment until today there are four of these 14 by 12 compressors, a 72" by 10' suction accumulator, three brine coolers

Lower Photo: Four 300-ton evaporative condensers in Pittsburgh Brewery.



and four 300-ton evaporative condensers, plus accessory equipment.

The highest recommendation possible is "A satisfied customer, with repeat orders." This quotation has always been a standard with Frick Company. Frick has been adding to this long list of satisfied customers each year for over a century.

If you need refrigeration for processing, air conditioning, ice making, cold storage, quick freezing or other cooling purposes, you will find Frick equipment and engineering service the ultimate answer. Call your nearest Frick Branch Office or Distributor today; they have the specialized knowledge and equipment to meet your particular needs.

DEPENDABLE REFRIGERATION SINCE 1882  
**FRICK CO.**  
 WAYNESBORO, PENNA., U.S.A.

Circle No. 31 on Reader Service Card

PA 400  
IS 99.7%  
PURE!

...WON'T REACT WITH  
WATER, REFRIGERANTS, OIL!



**COMPLETELY NON-CORROSIVE.** More than 99% of PA 400® Silica Gel is inert, amorphous silica. This silica removes moisture by physical adsorption instead of chemical reaction. PA 400 will not dissolve in the refrigerant or react with oil or water in any way. *It won't cause corrosion.* So ask for the drier filled with PA 400. Both you and your customers will be happy you did. See your distributor tomorrow.

**W.R. GRACE & CO.**  
DAVISON CHEMICAL DIVISION  
BALTIMORE 2, MARYLAND



## BOYLE ENGINEERING LABORATORY

CONSULTING AND EXPERIMENTAL ENGINEERING  
1280 W. DEVON AVE. • CHICAGO 22, ILL. • PHONE BOdney 3-8970  
July 16, 1958

Walker Stainless Equipment Co.,  
New Lisbon, Wisconsin.

Gentlemen:

Attached are two copies of the formal report which we have made out after testing your cold storage door.

We wish to take this occasion to congratulate you on bringing out an excellent new type of walk-in cooler door.

You will note in the report, the heat transfer of your door is in the average of .290 Btu/sq. ft. / hr. From my experience and also backed up by data taken from the American Refrigerating Engineers Data Book

cooler doors will have a heat loss of

Mr. This means that

insulation is com-

on the surface

heat loss

breath-

a few

We were amazed to find that we could hold zero degrees on one side of the door and high as 88° on the outside, with heavy condensate on the gasket and have no adhering of the gasket to the frame. It was amazing that after we soaked up the gasket with a lot of water and permitted the door to remain closed over-night, the gasket still did not freeze to the plastic frame of your door.

JMB/ee  
Enclo.



## an independent study shows . . .

"NO ADHERING  
OF GASKET  
TO FRAME"

Here's more evidence that the Walker fiber glass door is a truly new product development. Independent, unbiased, professional evidence from Boyle Engineering Laboratory, Chicago, is quoted above.

Light in weight, moisture-proof, beautiful in appearance, and practical in application, the Walker door is the refrigerator door of the future.

Inquiry on your letterhead will be promptly answered.



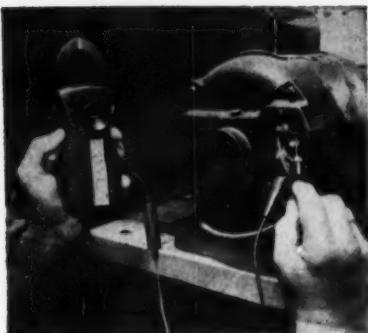
Typical Walker Fiber Glass Door Installation

**WALKER**

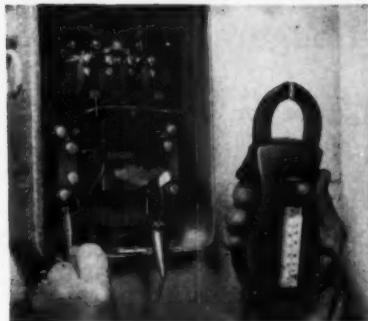
**WALKER STAINLESS EQUIPMENT CO. INC.**

New Lisbon, Wisconsin

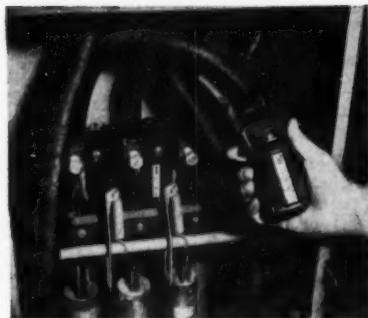
Circle No. 33 on Reader Service Card



Check unmarked terminals.



Check resistance of  
motor control solenoid coil.



Balancing circuits.

handle  
**99%**  
of all your  
test needs  
with the  
**ALL-PURPOSE  
AMPROBE RS-3**

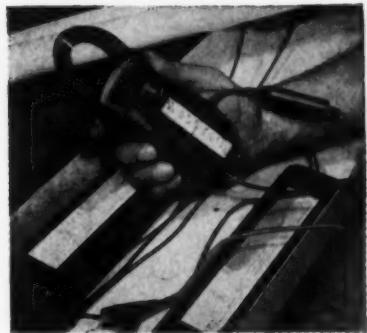


There's only one way you  
can do it . . . with the  
new AMPROBE RS-3 . . .  
the only tester small enough  
to fit in your pocket, yet  
versatile enough to measure  
volts, amps,  
and OHMS!

# NEW AMPROBE RS-3

Pyramid Instrument Corporation, Lynbrook, N. Y. In Canada: Atlas Radio Corp., 50 Wingold Ave., Toronto

Circle No. 34 on Reader Service Card



Check resistance of  
transformer windings of ballast.



Use as continuity tester  
to determine if fuse is good.



Check for low voltage condition.

Meets every commercial voltage requirement on three voltage scales . . . 0-150/300/600 volts ac. Accurate current readings from 0 to 300 amps on five current ranges. The ohmmeter scale is designed specifically for you . . . readings as low as 0.5 ohms can be taken, enabling you to readily distinguish the difference between short circuits and actual coil resistances.

Doesn't it make a helluva lot more sense to use this one all-purpose instrument than to tote *three* separate testers that can't even come close to AMPROBE efficiency?



# profit savers

...White-Rodgers Controls

New installation or replacement service—there's a dependable, accurate White-Rodgers Refrigeration Control to eliminate the callbacks that trim your profit margin to the bone.

If your profits and business reputation are built with each job you do, use White-Rodgers for replacement service... and on every order for new equipment write "Ship with White-Rodgers Controls".



Makers of FASHION and  
PUSHBUTTON... World's  
Most Modern Thermostats

## WHITE-RODGERS

Automatic Controls for Heating, Air Conditioning and Refrigeration

ST. LOUIS 6, MISSOURI

Circle No. 36 on Reader Service Card



141R

TORONTO 8, CANADA

REFRIGERATION & AIR-CONDITIONING

# Letters

Interesting . . . but!

EDITOR:

I have a story with a refrigeration angle having to do with a 500-year-old body (human) that was discovered in a frozen state in the Chilean Andes four years ago and is now preserved and displayed to public view in Santiago, Chile, in a specially designed refrigerated showcase.

I do not have a picture of the showcase but I do have a photo of the body before being placed in the case.

It's an interesting story.

PHILIP FERRY  
San Francisco, Calif.

*At the risk of disappointing BUSINESS readers, we informed Mr. Ferry that we felt the refrigeration application he described was too limited in nature to justify its publication. After all, how many 500-year-old bodies are YOU called on to refrigerate?*

Wants Plastic Duct Source

EDITOR:

Would you be so kind to give us the name of the company where we can obtain the "Plastic Duct."

L. THERWALL  
Wonder Building Co. Ltd.  
Montreal, Quebec, Can.

*The following firms manufacture plastic duct: Argo Plastic Products, Cleveland, Ohio; Beetle Plastics Corp., Fall River, Mass.; Corite Products Inc., Chicago, Ill.; Du Verre, Inc., Buffalo, N. Y.; Haweg Corp., Wilmington, Del.; S & C Mfg. Co., Cincinnati, Ohio; Valco Corp., St. Paul, Minn.*

Will Use Webster Series  
As Business Textbook

EDITOR:

We have been particularly interested in your "You're The Boss" series, since we are contemplating a reorganization of this business in the

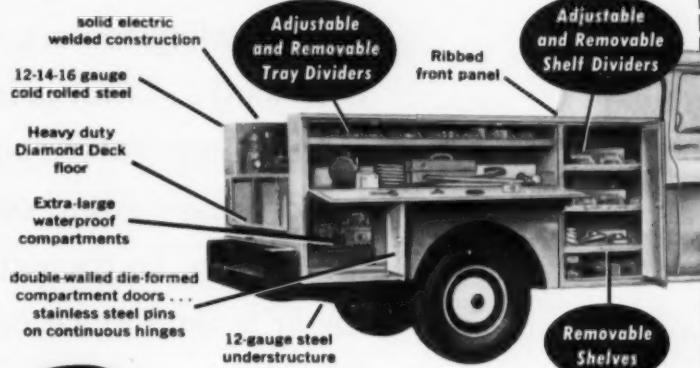
Continued on page 102

Circle No. 44 on Reader Service Card

# COMPARE!

Buy the READING Utility Body That Gives  
You All These Features at No Extra Cost!

Compare all leading utility bodies — get  
FREE Comparison Chart at your dealer  
or write READING BODY direct.



## READING UTILITY BODIES

job-planned for

REFRIGERATION & AIR CONDITIONING TRADES

READING BODY WORKS, INC., 420 Gregg Avenue, Reading, Penna.

**WATER  
SHORTAGE?**

**HARD  
WATER?**

**AIR  
POLLUTION?**



**SOLVEX**  
MAINTENANCE  
TABLETS  
OR GRAINS

Helps Solve maintenance problems for water-cooled equipment. Protects with protective film which increases efficiency by acting as a wetting agent.

For evaporative coolers, too, one tablet or a cupful of Maintenance Grains will improve efficiency by keeping filters soft and uniformly moist.

**SPECIAL  
ALGAE  
SOLVEX**

For safe, positive algae control. Destroys all algae and organic matter in cooling towers and spray ponds. Sanitizes, sterilizes, and deodorizes water-cooled systems.

Proved through the years . . . Ask your wholesaler or write

## CHEMICAL SOLVENT CO.

P. O. Box 487

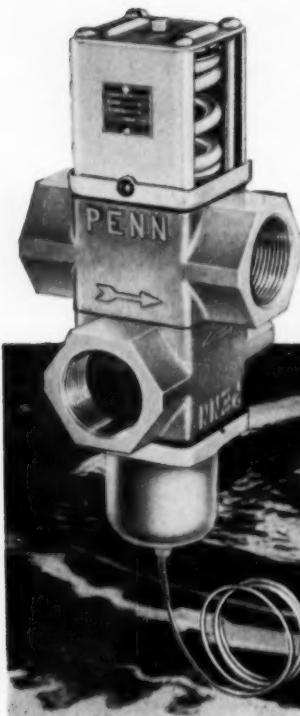
Birmingham, Ala.

Circle No. 45 on Reader Service Card

# sales tip for servicemen...

Now is the time to check all refrigeration and air conditioning jobs using cooling towers. Cooler weather is coming . . . that means lower cooling water temperature which drops refrigerant head pressure and reduces capacity of the system. To correct this . . . to reduce tower maintenance and compressor lubrication problems . . . install the Penn 3-way water valve! It maintains uniform head pressures regardless of outside air temperature and humidity. Don't miss this "natural" for extra sales and profit!

Ask your wholesaler.



**PENN CONTROLS, INC.** Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES  
Circle No. 37 on Reader Service Card

LET'S TALK

Business

## Looking Back — and Looking Ahead!

THIS is a sort of anniversary. Just a year ago I started writing these monthly columns. To those of you who have taken the time to read them and write to me, my sincerest thanks.

*Looking back over this past year we're able to see many things that have affected the refrigeration and air-conditioning business. Bad weather, tight money, a recessionary period, strong competition, lack of profits—all of these have taken their toll on manufacturers, distributors, and contractors alike. To sum it all up, it's been a tough year!*

Fortunately, however, the people who represent this business are not the type to hide their heads, roll over, and say, "We're dead." Most of the people who are part of this industry have the guts to say, "It's tough going, but by gosh we're not licked!"

*Despite all the problems that have confronted these people during the past months, I now can sense a renewed spirit and a will to do business.*

How can I feel this? Well, as I'm sure all of you realize, this magazine must sell advertising to stay in business. For the past 10 months this has been a particularly difficult job.

*The reason? Many advertisers have taken a "wait and see" attitude. They have been reluctant to spend money in the face of decreasing sales. This negative buying climate naturally has affected our business, as it has affected the business of other publications serving the refrigeration, air-conditioning, and heating field.*

But a change has taken place in the last couple of months. Now these manufacturers apparently have made up their minds that the only way to get business is to go out after it with all the force at their command.

*How can we tell? Well, take this issue of REFRIGERATION & AIR-CONDITIONING BUSINESS for example. For the first time this year the volume of advertising shows a marked upturn in relation to space in the same issue last year. There are even four new advertisers that have not used space in our magazine before.*

Now don't misunderstand me. This advertising hasn't just dropped in our laps. Our sales force has been driving hard to get this business. Our salesmen haven't been lying dormant, just waiting for the industry's attitude to change. They've been out knocking on doors and telling both advertisers and prospective advertisers how important BUSINESS readers are in buying their products.

*Many manufacturers will be calling on you—in person, through their distributors and through their advertising in the pages of this magazine—to tell you why their particular product is the best you can buy and use in your business. If you can capture some of this renewed spirit that is being generated at the manufacturing level, if you can transmit it to your own customers and prospects as you tell them why they should buy the products you are selling, it's bound to result in a comeback like we've never seen before.*

Good luck and good selling!

Thom Muir

# You Can Make Your Electric Utility A SELLING PARTNER



**Model Home**

EVERY AIR-CONDITIONING SYSTEM connected to the lines of any electric utility means added revenue for that utility. All utilities recognize this fact. As a result, many of them undertake to promote, in some way or other, the sale of this load-building product.

Do you, as a dealer, know just how much promotional effort the electric utility in your area puts behind air-conditioning? Do you know how you can tie into it and use it to fullest advantage to supplement your own advertising program?

If you don't, you'd better find out right now. You may be missing out on that little extra promotional push that would help you round up more bona fide prospects and convert them into customers.

In Cleveland, Ohio, for instance, the Cleveland Electric Illuminating Co. (CEI) consistently appeals to the public with its slogan, "Live Better Electrically". Radio spots, newspaper ads, promotions with home builders, educational literature, and even a contest offering de-humidifiers to the winners — these are some of the ways this utility gives the local air-conditioning industry a boost.

"Regardless of the specific product that may be featured," explains John Lushbaugh, CEI residential heating and air-conditioning representative, "all our promotion is aimed at getting people to think in broad terms of *all* electrically-operated conveniences. The only reference to the utility itself is the mere mention of the company name and slogan."

So what does all this mean for the air-conditioning dealer?

For one thing, his prospects are pre-conditioned. During the months of July and August, for instance,



**Cost Calculator**



**Heat Pump Booklet**

Cleveland area radio listeners heard 200 CEI-sponsored spot announcements on air-conditioning. As many as 10 per day were aired when the temperature hit 85 F.

These 30-second commercials mentioned brand names, but no specific type of system. The utility picked up the tab for all of these spots.

No dealer names are mentioned in these announcements, but dealers still have a sales incentive because the frequency of brand name mention is based upon that brand's sales volume in the area.

Dealer sales are totaled each year by brand. The brand that tops the list is mentioned most often in the next year's spot announcements. If Brand X, for instance, represented 30% of the previous year's total sales, it would be mentioned in 30 out of every 100 spots scheduled for the following season.

Even though dealer names are never mentioned, dealers often buy time immediately after the CEI spots. Thus if their particular brand is mentioned they get what amounts to 30 seconds of free radio advertising.

Almost 600 additional radio spots were used by CEI this year to talk up the dehumidifier. Some of these were 10 seconds long, others 60 seconds. The former just gave brand names. The longer announcements included dealer tie-ins.

Entry blanks for weekly drawings were made available from dealers as well as CEI. A person could have two chances of winning a dehumidifier each week. A total of 12 units were given away.

Newspaper advertising by the utility consisted of co-op ads with dealers. CEI paid 40% of the cost. Dealers paid the balance. CEI also bought 10 separate

ads. This campaign began sometime in May and lasted through July.

A promotion with builders exhibiting new houses was tried and it proved successful, according to Lushbaugh. The program was called "House of Stars". Signs in the shape of stars were displayed in front of each new house indicating the various electrical features inside.

A colorful booklet with easy-to-understand facts about the electric heat pump has been distributed widely by CEI. Distributors are urged to give them to dealers for handout pieces. The booklet contains an actual 12-month "operating cost history" of a heat pump installation in a typical suburban home.

A novel cut-out promotion distributed in the same way permits the user to dial the facts about his particular cooling needs. The piece is in the shape of a modern home. When the dial at the bottom is turned various unit sizes appear in one window. The other window of the home shows the corresponding cost per operating hour.

Telephone inquiries received by CEI are handled by two trained girls. Prospects for cooling and/or heating are urged to specify a brand name. Then they are referred to a distributor or dealer handling that particular brand. If these prospects wish to be contacted regarding their air-conditioning needs, their names are passed along to the merchant in question.

But CEI doesn't stop there. A continuing check is made to see that all leads are followed up. And the dealer or distributor who becomes neglectful about these follow-ups, Lushbaugh points out, is not apt to get the next good lead that comes along.



# Is the 5-Year Warranty Good for You?

by Thom Muir, publishing director

**IS THE 5-YEAR WARRANTY** on central residential and commercial air-conditioning good for you and good for your customers?

Some dealer-contractors will say yes and some will say no. But whatever you answer, it will pay you to think about this subject in relation to many of the problems it presents.

As you well know, the 5-year warranty is not something for nothing. All manufacturers must include in their selling price of equipment an amount of money sufficient to cover the cost of providing and administering this protection. So you are paying for this extended warranty when you buy the product. In turn, you are passing this cost on to your customer when you sell the product.

**What are you and your customer getting** for your money when you pay for this protection?

Most 5-year warranties in effect today tell the user of the product that the refrigeration cycle, including compressor, condenser, evaporator coil, and all inter-connecting parts, is warranted against manufacturing defects in material and workmanship under normal use and service.

In addition, there is a specific labor allowance or indication of a labor allowance spelled out in the warranty to cover the cost of removing and re-installing the components.

All of this sounds good, particularly when a salesman tells a prospect that the equipment is covered with a 5-year warranty which includes all parts and labor. But, does the customer know that he is paying 5 to 10% extra for this protection?

You can be sure that in most cases he does not.

**Let's look at your side** of the picture. What do you get when you sell this 5-year warranty?

**More sales?** This is questionable. Air-conditioning is sold on the value of the service it performs, and upon

the confidence placed in the seller by the purchaser.

If the warranty is a significant factor in reducing sales resistance, then why stop at 5 years? By adding an appropriate amount to the cost of each unit, the warranty could be extended to 10, 15 or even 20 years.

**Customer satisfaction?** Again, questionable. Too often the glowing terms used in explaining the five-year warranty lead the customer to believe that *all* service performed during the five year time will be free.

Even such things as control failure, blower problems, fuse blowouts, and filter changes are sometimes expected to be free. When the bill comes, or payment is asked, the customer is upset and angry because he didn't understand he would have to pay for this type of service. This leads to customer dissatisfaction rather than satisfaction.

**Loss of profit on components?** You are denied a profit on all of these components for 5 years under most warranty contracts. Yet you are expected to maintain — and you must, to properly perform your duties of business — an adequate inventory of these components to give your customer prompt replacement if failure occurs.

So, capital is tied up in parts from which you cannot expect profit during the life of the warranty.

**Loss of profit on labor?** The labor allowances under most warranties are based on average cost of labor and time required to replace the faulty part. Generally these are minimum and, for the most part, cover base costs only.

Thus these allowances again preclude normal profit for a period of 5 years for those dealer-contractors who undertake to fulfill the spirit of these warranties.

**Increased cost of administration?** You are faced with maintaining extensive records on each piece of equipment for the life of the warranty. While this should be normal procedure for any dealer-contractor,

**WE TELL YOU** in this article what our opinion is of the 5-year warranty for central residential and commercial air-conditioning. We point out that it's not "something for nothing". We express our doubts that it sells a nickel's worth more of equipment or makes the customer more satisfied. We point out that it increases your administrative costs and keeps you from making a normal profit on parts, labor, and the sale of maintenance contracts. And we tell why manufacturers feel that the situation is going to get worse.

**NOW YOU TELL US** your opinion so that we can present both sides of this highly controversial subject. Are you—the dealers, distributors, and contractors who sell central residential and commercial air-conditioning—for the 5-year warranty on this type of equipment or against it? If you're for it, tell us why. If you're against it, give us all your reasons. Write now to *Thom Muir, Refrigeration & Air-conditioning BUSINESS, 812 Huron Road, Cleveland 15, Ohio.*

the volume of credits and debits that must be made on all warranty parts, as well as labor charges, are far above normal.

There have been instances where the available open account credit of a dealer-contractor has been used up due to the delay in clearing paperwork credits on in-warranty parts. Each added hour of your time or your bookkeeper's time in handling this paperwork is costing you money.

**Loss on sales of maintenance contracts?** Many dealer-contractors have established profitable and well-manned service departments on the basis of maintenance contracts with air-conditioning customers. Such programs have enabled them to maintain full employment of service people as well as adequate parts inventories.

More dealer-contractors would like to do the same. But all of them are finding such contracts hard to sell in the face of the customer's statement, "I have a 5-year warranty."

This restricts the growth of good service organizations and places a heavy burden on those trying to maintain adequate service manpower on a year-round basis.

**All this leads one to ask,** "Is the dealer-contractor getting a good deal out of the five-year warranty?" It doesn't look that way.

But will it improve?

We contacted a number of manufacturers to get their thinking on this subject. From what they told us, it appears that even greater restrictions will be placed into effect on the 5-year warranties. And here are some of the reasons:

**Improper diagnosis** of failures by local dealer-contractors. Often they remove and replace components that, upon test by the manufacturers of these components, are found to be okay.

**Dishonesty** on the part of some dealer-contractors in charging back labor allowances. Investigation has shown that some firms charge both the customer and the manufacturer for labor performed. Records also show instances where charges have been made for labor that was never performed.

**A belief** by some manufacturers that the five-year warranty has encouraged sloppy, careless, and negligent installations on the part of some dealer-contractors. The truth is that some of these firms operate on the basis of, "Put it in any old way. If it fails, there's the 5-year warranty to protect it."

**Out of all this** will come added restrictions that will cause the legitimate dealer-contractor an increased burden in proving both product failure and performance of labor. This will mean added costs to you without the value of added profit.

**What is the answer** to these problems?

We believe the answer lies in a return to the standard 1-year warranty giving the owner protection against difficulties in workmanship and material.

This would make possible an immediate reduction in equipment prices. It would eliminate shady practices by that group of merchandisers who take advantage of the extended warranty to the detriment of the legitimate and honest dealer-contractor.

It would strengthen the profit picture for distributors, dealers, and contractors who are expected to maintain inventories of components.

It would encourage dealers and contractors to expand their service facilities. This would mean greater benefits to the owners of air-conditioning.

And, most important, it would allow you to negotiate service charges after the first year of equipment operation. It would place the responsibility of service charges where it rightly belongs — between the customer and yourself.

**When you sell automotive air-conditioning . . .**

# You Have To Install It Fast

SELLING AUTOMOTIVE air-conditioning faster than it could be installed was a vexing problem which a St. Louis dealer was glad to face.

Mel Litzsinger, Litzsinger Auto Body Co., St. Louis, Mo., used direct mail and weekly newspaper ads to sell 50 units during the first summer he offered complete automotive air-conditioning services. An air-conditioned demonstrator car, billboards, radio commercials, and a display at the annual auto

show helped increase his volume to 100 units a year by the end of the third summer season.

By this time the problem which faced him was how to install the air-conditioners faster rather than how to sell them. Once he had sold a customer on the benefits of automotive air-conditioning he had to be prepared to install the unit immediately. Customers not only wanted the benefits of air-conditioning, but they did not want

their cars out of service for any length of time.

By the end of the fourth season, Litzsinger had built an annual volume of 261 units, enough to require five full time men. This volume made stepping-up the speed of installations not only desirable, but an absolute necessity.

Employing mass-production techniques Litzsinger has been able to keep up with the demand for immediate installation. An 80' x



**A SUSPENDED TANK OF REFRIGERANT** makes short work of charging a compressor. This St. Louis dealer lives up to his "unconditional guarantee" by providing customers with immediate service with this time-saving device.

20' painting room, with an entry at one end and an exit at the other, has been converted into an assembly line for the installation of air-conditioners.

An investment in power tools has paid off handsomely in cutting down the time required to install a unit. A hydraulic punch capable of punching through auto body steel of all thicknesses, and producing holes all the way from  $\frac{1}{4}$ " to 4" has reduced installation time by at least two hours. The punch works equally well in the trunk or front of the automobile.

Another bottleneck in installation was the necessity for cutting large holes for air-conditioning ducts through the floor of the trunk. Litzsinger took another full hour off the job when he bought an air-operated power hacksaw, which snips out the 15 x 5" rectangular opening required for the main ducts in most trunk installations.

#### **Handles Service Easily**

To handle service customers who drive in when the air-conditioning capacity of their systems becomes low, Litzsinger has developed a device for charging the compressor. This service tool consists of a triangle of iron braces, which supports a tank of refrigerant, plus the essential valves, connections, pressure gauges, and other equipment. The hinged brace swings out to a 45° angle from the wall when in use.

It has eliminated the heavy labor and time involved in moving refrigerant tanks and positioning automobiles to charge a compressor. It also serves to provide the customer with the immediate service so that his car will not be tied up for any length of time.

Litzsinger's firm got into the automobile air-conditioning business quite by accident. In 1953, Litzsinger contracted with a distributor to install package units for three dealers.

To prepare for the expected volume, Litzsinger took a two-week training program at the manufacturer's plant. Then he had a plant representative spend several days

in his shop, teaching his mechanics proper installation techniques.

During the first summer there were not enough calls to pay for the extra tools which Litzsinger had purchased, or for the time he had spent in training. It was not surprising to him when the three dealers with whom he had been working soon went out of business.

Litzsinger was convinced that there was a potential market, and with proper merchandising methods he felt he could reach that market. The distributor who had been supplying the three dealers assigned the franchise to Litzsinger's shop.

First step was to select 650 cards, representing paint or body work customers, whom he knew were accustomed to luxury in their automobiles. To each he sent a short letter telling of this new service, and inviting them to come in for a demonstration.

To serve as a demonstrator Litzsinger air-conditioned his own car and began loaning it out for a day's use at a time to what he considered good prospects. He made other mailings and supplemented these with both display and classified advertising in the newspaper.

It was the direct mail, however, according to Litzsinger, written against the background of 21 years of service, which was responsible

for the sale of some 50 units during the first summer. It was this encouraging return which led Litzsinger to set up his highly unusual assembly line.

As he had found to be true in automotive repair, one good job sells another, and that enthusiastic referrals from pleased customers were his major advertising asset.

During the second auto show in which he participated, Litzsinger wrote prospect cards on 156 interested prospects. He later sold 16% of these. He felt this was a much higher return per dollar invested than he could have achieved with other forms of advertising.

#### **Timing Is Key to Promotion**

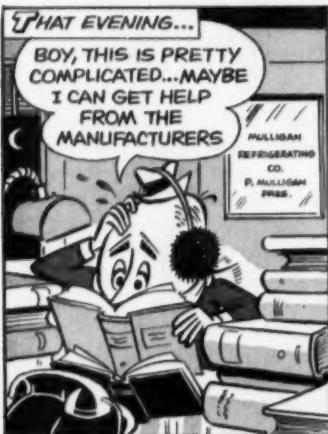
After five years of experimenting, Litzsinger's promotion now is focused directly on what he considers the most productive sources. For example, each day, between 5:30 and 5:45, when hot, weary motorists are driving home from work through heavy traffic, he sponsors disc jockey programs on two local radio stations.

Early in the season he devoted all of the radio commercials to the fact that convertibles, too, can be air-conditioned and mentioned a specific case which the shop had turned out. Since then the shop has averaged a convertible a week.



**THIS HYDRAULIC PUNCH** simplifies cutting holes in the trunk or front end of the automobile. The investment has paid off by saving two hours of the time required to complete an installation.

# Mr. Mulligan gets technical help the easy way



**YOU SAVE TIME, YOU SAVE MONEY** when you buy from your complete air conditioning and refrigeration wholesaler. When you need a refrigerant, be sure you always ask for Freon\*. It's the refrigerant backed by more than 26 years of Du Pont technical and manufacturing leadership. "Freon" is the refrigerant that sets the industry's standards for purity and dryness.

SALES AGENTS: Ansul Chemical Co., Marinette, Wisconsin; and Virginia Smelting Co., West Norfolk, Virginia

## FREON<sup>®</sup> REFRIGERANTS

\*Freon and combinations of Freon- or F- followed by numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon refrigerants.

Circle No. 21 on Reader Service Card

Buy where  
you see this sign...



## DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING  
...THROUGH CHEMISTRY



**PINPOINT HUMIDITY CONTROL** has reduced paint and storage costs of formed steel stock in this fabricating plant. Riding the overhead crane rail, the air handling units (arrows) distribute either heated or cooled air to the work area.

## Air-conditioning Aids Steel Storage

AIR-CONDITIONING IN A METALWORKING PLANT can improve the product and production according to Penco Metal Products<sup>®</sup> Div., Alan Wood Steel Co. The new Penco manufacturing center at Oaks, Pa., is using air-conditioning throughout the entire plant and offices to reduce the cost of steel storage, improve inventory control, give better customer service, increase production, and reduce employee turnover.

In the past, Penco was forced to paint its steel stock immediately after it was formed. Without the protective layer of paint, the stock would be coated with a film of rust within 24 hours.

By controlling the humidity of the storage area at exactly 35%, the raw steel parts can be stocked indefinitely. In addition to saving the cost of the extra coat of paint, it means the plant can deliver the product in the color desired within 24 hours.

Former practice was to store finish-painted stock in one standard color. This meant that the turnover of stock depended on the demand for that one color. It also meant that the stock could be easily spoiled by scratching the enamel in handling. Now quantities of fully fabricated stock parts can be manufactured according to demand, without consideration for color.

Air-conditioning in the offices and plant has helped reduce employee turnover, and has increased efficiency. An official of the company has stated that while there are no cost figures available, the efficiency of the workers and customer services are obvious. The firm re-

ports it had 700 applicants for about 50 job openings at a time when skilled labor was at a premium.

Principal component of the system is a 600-ton capacity Trane hermetic centrifugal compressor which furnishes chilled water to room units in the office, and to air handling units in the factory.

In the one-story manufacturing area, 13 Trane Climate Changer air handling units are spaced throughout the plant. Fresh air is brought to these units through goose necks on the roof, either warmed or cooled as desired, and distributed through ducts and diffusing outlets to the working area. The average unit delivers approximately 23,000 cfm.

In one section of the plant, an overhead crane dictated the minimum height for suspended air handling units. The units were mounted above the crane track, and equipped with special louvered discharge nozzles which distribute the conditioned air down to the employee level.

A single coil is used for chilled and hot water. A thermostat in the discharge shuts off the outside air damper at a pre-determined minimum setting. Temperature is controlled by a thermostat regulating a by-pass valve in the water line, plus a duct stat regulating the percentage of outside air used.

In the office space, the varying comfort requirements were met by 24 room units. In the stenographic pool, two air handling units and a ductwork system was used instead of room units.

# Simple Ideas Pay Off

by Richard W. Bracker

SOMETIMES THE SIMPLEST ideas are the best. With a minimum of expense, many of these simple ideas can bring you a maximum return in terms of improved operating efficiency.

Take the experience of Olsen-Ley Co., for instance. Over the years George Ley and Wade Olsen, partners in this cooling contracting firm in Pittsburgh, Pa., have come up with a number of simple but effective ideas to help cut down the company's equipment losses, speed service operations, pare operating costs, and smooth customer relations.

Here is a rundown of some of these ideas and what they have accomplished:

**IDEA 1 Color code all hand tools and field service equipment.** Like most contractors, Olsen-Ley has put a lot of money into hand tools and portable equipment for servicing cooling systems in the field. Also like most contractors, Olsen-Ley used to chalk up a sizeable amount each year for tools and equipment that somehow never come back from the job.

Now all equipment is painted blue and stenciled with the company name. This makes each item easy to identify. Olsen-Ley tools no longer get mixed in with those of plumbers and electricians on the same jobs.

**IDEA 2 Make special cases for fittings by converting war surplus boxes.** These boxes already came equipped with movable trays, but Olsen-Ley improved upon this arrangement by building compartments both in the trays and in the bottom of each box. These compartments are sized for stocking an adequate supply of various sizes of fittings.

No longer do Olsen-Ley mechanics run out of some particular fitting on a job and waste time trying to pick one up. Instead, each man carries one of these fittings cases with him on every call, and always has the fitting he needs right at hand.

**IDEA 3 Use standard station wagons for making service calls.** Traffic restrictions in Pittsburgh prohibit certain types of commercial vehicles from parking on downtown streets. "This became such a problem for us that we decided to use station wagons instead of trucks," Ley explains.

"Now the only thing we have to watch out for is the condition of the springs on the station wagons. Helper springs solve this problem."

**IDEA 4 Tailor and equip tool boxes for specific jobs.** Separate boxes are set up with the required tools for each of a variety of specific jobs. For example, a man going out on a job requiring cutting and threading of pipe is assigned a box containing the necessary tools. This kit would include such items as pipe cutters, cutting oil, stand, and dies.

This practice saves a lot of time and results in top-notch workmanship, Ley reports.

**IDEA 5 Use wall racks for visual filing of current customer records.** They hold estimates, proposals, and work orders for all jobs in progress. All data for each job is put into a folder that is labeled with the customer's name and then placed in one of the filing compartments in the rack. This arrangement makes each job folder easy to spot.

"Although we also use standard drawer-type cabinets for our regular filing, I used to let current orders pile up on my desk," Ley declares. "When a customer called about a specific job I used to take one look at the papers and folders strewn about my desk and then tell him I would call him back. As soon as I hung up I began a frantic search for his order folder."

"Now, thanks to the wall rack, all that confusion and delay is eliminated. I can find any current order promptly while the customer is still on the phone. I pull it out and the call-back is eliminated."

# 5

simple ways to  
bring down costs  
and keep work  
flowing smoothly



TOP: To make sure every serviceman has plenty of spare fittings, converted war surplus boxes serve as special cases (Idea 2). The boxes are easily accessible from the back of the standard station wagons used on service calls (Idea 3) to beat traffic restrictions.



CENTER: Knowing what tools to take for a specific job can save a lot of time (Idea 4). Separate boxes with tools for specific jobs permit workers to carry only the tools they will need. Color coding all hand tools and field service equipment (Idea 1) makes each item easy to identify when the mechanic is ready to leave the job.



BOTTOM: A compartment for each job in progress (Idea 5) provides quick reference when a customer calls. Folders in the wall rack hold estimates, proposals, and work orders.

Continuing a 12-part series:

## YOU'RE THE BOSS

by GEORGE C. WEBSTER, president, George C. Webster and Associates, Inc., Management Consultants

JANUARY

FEBRUARY

MARCH

APRIL

How To Analyze  
Your Business

Business  
Philosophy

Planning Ahead  
for Profits

Organizing for  
Effective Control

# Profitable Pointers on

THE AVERAGE DEALER OR CONTRACTOR in the refrigeration and air-conditioning field probably knows less about advertising and its effectiveness than any other phase of business management. Probably more misinformation is passed out on advertising, by well-meaning persons who claim to have the answers, than on any other subject.

There are many reasons for this.

First, the consumer's behavior cannot always be predicted. The same advertisement under identical conditions rarely yields the same results.

Second, identical conditions are rarely experienced. Thus an advertisement that was successful when run on a sunny day might not pull at all on a rainy day.

Third, few people measure results carefully enough to develop satisfactory answers.

Fourth, some advertising has a long-range effect which is difficult to measure.

Fifth, reaction to advertising is often prompted by reasons other than those considered important by the advertiser. For instance, an advertiser might believe a clever headline was getting the results, whereas actually the response may have been due to a low price offer, or some point made in the copy.

The subject of advertising, with its many unknowns, offers a real challenge to the businessman.

Over the years a few generally accepted principles have been developed that should be followed. These principles are by no means absolute rules. Rather, they are guideposts that should be followed unless you have concrete evidence that satisfactory results can be obtained by using some alternative. Here they are:

- An advertisement is nothing more than a means of telling the reader what you have to offer him. The closer the ad approximates what you would say if you were trying to sell your products or services on a soapbox at a busy street corner the better.

The headline of the ad approximates what you would shout to the passing crowd to get their attention. The body copy is what you would say after they stop to listen. Any illustrations in the ad are the things that you might hold up to the audience to explain or show them what you are selling.

Asking the audience to buy is like saying in an ad, "Call by phone or come in to the store now!"

- Avoid being cute. Few of us are clever enough for this. Just tell your story in a straight-forward manner.

- Give the reader reasons for buying from you.

- Be consistent. Don't blow hot and cold. Never plan an advertising program based on one ad; always plan at least a three-month program.

- Once you have found a successful ad, don't change it for the sake of change.

- Try to learn why each prospect called you. This will help you determine how effective your advertising is.

- Don't start an advertising program without a well planned budget that will yield satisfactory profits if the objective sales are obtained.

- Keep your employees informed of your general advertising program and of each specific ad.

- Be sure you have the capacity to handle the business that the advertising produces.

- Don't expect miracles. Advertising is just one tool of business, not a panacea.

**MANAGEMENT CLINIC:** Need help on some of your specific management problems? George Webster offers BUSINESS readers the benefit of personal consultation by mail. Simply send your questions to him, c/o this magazine. He will answer you directly — and without charge.

REPRINTS of this article — and eventually the entire series — will be available. Price of this one: 35¢. Send order and payment to Reprint Dept., REFRIGERATION & AIR-CONDITIONING BUSINESS, 812 Huron Road, Cleveland 15, Ohio.

THIS  
MONTH

MAY JUNE JULY AUGUST OCTOBER NOVEMBER DECEMBER

Accounting as a  
Tool of Control

Control  
of Expenses

Control of  
Job Costs

Control  
of Sales

Control of  
Advertising

Financing  
Your Operations

Employee  
Relations

Simplified  
Budgeting for  
1959

## Control of Advertising

**Advertise your business philosophy.** In the second article of this series (February 1958 issue) we talked about your business philosophy and how important it is in your long-range planning. Advertising is one of the means of telling your customers and prospective customers about your business philosophy.

It should help you develop a "store personality". It should create an image in the customer's mind of just

what your store stands for. You should carefully review every ad that you intend to run to see that it is consistent with the kind of image you want to create.

**What media should you select?** There isn't too much in the way of ground rules to help you determine whether you would be wiser to advertise by newspaper, direct mail, radio, or tv, or some other

*Continued on next page*

ADVERTISING BUDGET CONTROL—HOMETOWN HEATING & COOLING CO.

	1 Original Budget	2 Revised Budget*	3 Expenses Committed	4 Expected Accrual	5 Expected Over/(under)	6 Actual Expenses	7 Actual Accrual	8 Actual Over / (under)
Jan								
Feb								
Feb to Date								
Mar								
Mar to Date								

\* Revise as necessary to meet accrual



MONTHLY ADVERTISING MEDIA BREAKDOWN—HOMETOWN HEATING & COOLING CO.

	NEWSPAPER			DIRECT MAIL	PHONE BOOK	RADIO TV	PHONE CANVASS	MISC	TOTAL SPENT
	Gross	Co-op	Net						
Jan									
Feb									
Feb to Date									
Mar									
Mar to Date									



media. Your own results will have to provide the answer.

Just be sure that if you use more than one kind of advertising you measure the results carefully to see if each is contributing business in proportion to its cost. Determine the cost per prospect or cost per sale for each media you use by dividing the cost of the advertisement by the number of prospects or sales received. Then you will be better able to select the media that pays off for you.

**How much should you spend? When?** The amount that you spend for advertising is tied in with the amount that you spend for commissions and the occupancy cost of your retail store.

These are tied together because the more you advertise the easier it is to sell, and so you can get by with lower commissions and a poorer store location. If you advertise very little you will have to pay a higher commission, because the salesman will have to get prospects on his own. Or, you might have to have an expensive store location.

A rule of thumb for the cost of advertising, commissions and occupancy is that the three should equal a little less than one-half of your gross margin, or somewhere between 10 and 15%. A typically balanced program would have a very low occupancy cost (less than 1% with expenditures of about 8% in commissions and 4% (your money) in advertising.

You can adjust these figures to your own purposes, raising the advertising and lowering the commissions, or vice versa. But don't exceed 50% of your gross margin for the total.

Once you have selected the percentage to spend, multiply this percentage by the volume you forecasted by month under the methods described in the March article. This should be done both for the over-all volume and for each individual product group,

such as heating, residential air-conditioning, and commercial refrigeration.

Advertising should be closely tied in with your sales potential, but should lead it slightly. Thus you should make adjustments in your final budget for this, as well as for some minimum off-season advertising, so as to keep telling your story consistently.

**Use charts for control.** To keep your advertising expenditures in line with your budget is difficult when your budget is based on a percentage of sales (which may or may not meet the objective). If your sales drop off, it is generally difficult to cut back advertising dollars sufficiently to keep within the allotted percentage.

The advertising budget control chart shown with this article will aid considerably in the control of advertising costs. The second chart shown is designed to help you break down expenses by media and show the degree of cooperative participation.

Here is how the advertising budget control chart works.

In Column 1 you put the original budget and to date figures for the year. Each month you revise this in Column 2, based on unforeseen conditions and on how much your accrual was over or under the previous month's expenses.

Column 3 is for the commitments you make for the month under consideration, and Column 4 is the expected accrual (forecasted sales multiplied by the percentage you are using for advertising expense).

Column 5 is the amount you would be over or under your accrual. It is, therefore, Column 4 subtracted from Column 3, or vice versa — depending on whether you are over or under.

Column 6 is what you actually spent, and Column 7 is the actual accrual, which you will not know until the month is over.

Column 8 is the most important figure, because it tells how much you are over or under for the month and to date. By watching this column and adjusting your budget accordingly, you should be able to do an effective job of controlling advertising costs.

### Don't Miss Any of this "Textbook" on Business Management

Reprints of earlier articles in this 12-part series are still available. Many individuals and companies are placing orders for the entire series now to ensure having the complete text at year's end. On all such orders, billing will be withheld until the series is completed. Subject of each month's article is shown at the top of the preceding pages of this article.

These reprints are priced as follows: 1 to 5 copies, 35¢ each; 6 to 15 copies, 25¢ each; 16 to 50 copies, 20¢ each; 51 copies and over, 15¢ each. To determine cost of complete series, multiply proper quantity price by 12, and then by number of copies desired. For example, 10 copies of the complete series would be \$30, payable upon final delivery.

# ***Small Self-contained Units***

## ***Can Do That Big Job . . .***

**DON'T OVERLOOK THE VERSATILITY** of the small, self-contained air-conditioner. Lenkurt Electric Co., San Carlos, Calif., didn't. It used no less than 68 units (all of them on the roof) to air-condition its 88,000-sq.ft. building.

Most important to the firm, which sought to keep costs at a minimum, was the big savings with the small units. The job cost nearly 50% less per square foot than a single-system operation.

Humidity control is important to Lenkurt, which uses precision instruments to build telephone carrier equipment. Temperatures exceed 90 F for only eight days during the summer. But being only 1½ miles from the San Francisco Bay creates a humidity problem and uncomfortable working conditions.

The company first considered large central systems to cool the entire plant area. The high cost of ductwork ruled out this possibility.

The job was unusually tough because of the two distinct types of buildings which make up the factory. Some unique air control and air distribution problems had to be solved.

A series of steel buildings with gabled metal roofs made up the original factory. When it was expanded, a 50'-wide building of concrete "tilt-up," flat-roof construction was built around the original factory area.

Company officials, however, insisted that the job be done without any large equipment protruding above the roof lines. They got their wish.

Contractor Leslie Sutherland,



**UNIQUE PLACEMENT** of small, self-contained air-conditioners is seen in two views of roof of Lenkurt Electric Co., San Carlos, Calif. Contractor satisfied company officials by providing installation without any large equipment protruding above roof lines.

who operates Bay Sheet Metal Co., San Carlos, was contacted. Sutherland specified O. A. Sutton equipment and he suggested installation of 68 Vornado units (3½-ton) for the job.

A new-type lighting system in the older factory influenced the job's design. The whole ceiling area is covered with translucent fibre glass. Fluorescent light fixtures hang in the space above. The entire ceiling area acts as one large light source. There is a clearance of about 10' between the roof peaks of the steel buildings and the new ceiling.

It was decided that 24, 3½-hp units on the roof would air-condition the older factory. Duct was run from the evaporator down through the roof and across the attic to strategic inlet points.

The problem of return air was solved by using all of the enclosed attic as a big return air chamber. Glass used in the lighting had a 4% air-leak factor, and more return air was gained by enclosing exposed ceiling beams with porous, decorative covering.

Each unit had a return air duct running from the unit down

*Continued on page 95*

YOUR SERVICE  
MECHANICS CAN  
HELP YOU

***Make  
Money  
on Service  
Contracts***

DO YOU WANT TO CUT DOWN the cost of replacement parts on service contracts? The best way to do it is through your refrigeration mechanic. E. E. Byrd, Commercial Refrigeration Co., Washington, D. C., has made his mechanics working partners, and in so doing has found a method for keeping replacement parts costs down.

This refrigeration service firm specializes in flat-fee contracts with chain stores, drug stores, restaurants, hospitals, and various other commercial establishments. It normally budgets 25% of the net amount of the contract for replacement parts.

Originally Byrd felt fortunate if he got through the year with less than 35% of the total contract spent for parts. He felt that the solution to this problem was in giving the mechanics more of an incentive to do a better job on routine service calls.

Since the cost did not come out

of the mechanic's pocket, Byrd found that his men were taking such shortcuts as using refrigerant to clean a greasy compressor head; or not bothering to oil moving parts which were hard to get at.

Byrd decided that he would use the 25% allotted for parts as an incentive to make his men pay closer attention to details, and to do a better job on inspection and routine service calls.

Any part of the 25% left at the end of the contract year is given to the mechanics as a cash bonus. Under this system Byrd has found that his mechanics do not replace parts indiscriminately, and they do a better job of maintaining parts on inspection calls.

Each mechanic is assigned a specific territory and told how much money is available for parts covering all the contracts in that territory. Any part of that money left at the end of the year is his.

Byrd employs a full time inspec-

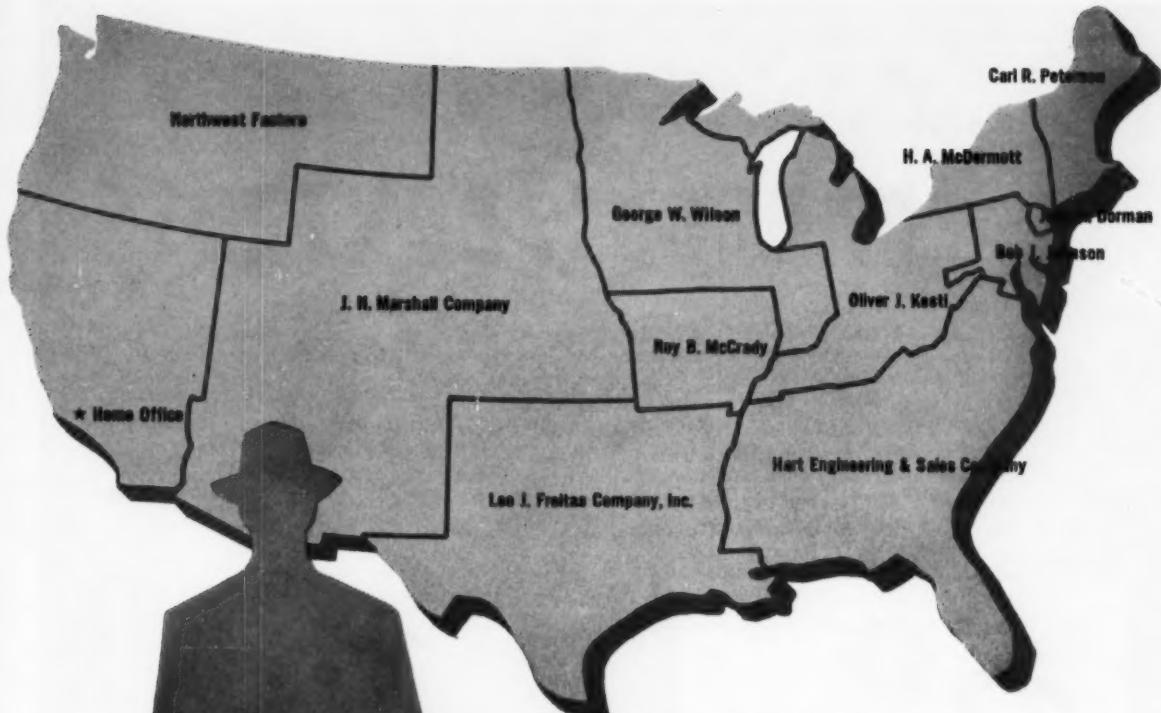
tor who visits service customers to make certain the mechanic is doing a thorough job. This prevents any haphazard methods of repairing parts that *should* be replaced. The inspector spot-checks the customers without forewarning the mechanics and sends in daily reports of his calls.

This plan has given the mechanics the incentive to insure in advance against breakdowns. For the company it has resulted in a steady increase in profits for the company, and more customers based on a good reputation for service.

Byrd uses this incentive plan as a selling point when talking to prospective customers. He can promise them good service throughout the year . . . service that will keep their equipment in good shape without breakdowns that cause delay while waiting for replacement parts or time consuming repairs.



LOOKING OVER THE BOARD which shows the service customers under contract is E. E. Byrd, Commercial Refrigeration Co., Washington, D. C. The company expects to have 1000 service contracts on hand by the end of 1958.



## YOUR **TRONA** REFRIGERANT FIELD MAN

**HE SELLS BY CAN OR CARLOAD...**  
**HE STANDS FOR DEPENDABLE**  
**DISTRIBUTION THROUGH RECOGNIZED**  
**REFRIGERATION WHOLESALERS**

This man—your Trona\* refrigerant field representative—is a key man in the distribution picture across the nation. He's an important man for you to know. He represents the dependability you need...the service you want...the quality you expect in your refrigerant source. His years of business experience, technical application knowledge, and constant exposure to new trends in the industry are valuable assets for you. What's more—he's usually a one-man source of related refrigerant items.

*All these foregoing qualities are reflected in the main product he carries—ISOTRON† refrigerants—distributed nationally by American Potash & Chemical Corporation, maintaining the policy of distribution through refrigeration and air conditioning wholesalers.*

\*Tradename and trademark of AP&CC

†Isotron is a Pennsalt trademark

**TRONA**

For further information write

**American Potash & Chemical Corporation**

3000 West Sixth Street, Los Angeles 54, Calif. 99 Park Avenue, New York 16, New York

Export Office: 99 Park Avenue, New York 16, New York

Circle No. 17 on Reader Service Card



**Simplify Air Conditioning  
Control Panels with**

# **RANCO "G" CONTROLS**

Compact, Ranco "G" Controls were developed for air conditioning control panel designs to take less space, are easy to install and are readily adaptable to your specific product.

Ranco "G" Controls include both high and low pressure models with automatic or manual reset; low pressure cycling controls with (for factory use only) or without dif-

ferential adjustment; and dual pressure controls by pairing combinations of single controls. Three different switch assemblies provide ratings from pilot duty, intermediate to high ampere switching capacity in single pole, single or double throw action.

For further details call or write to Ranco Inc., 601 West Fifth Ave., Columbus 1, Ohio.



World's Largest Manufacturer  
of Refrigeration Controls

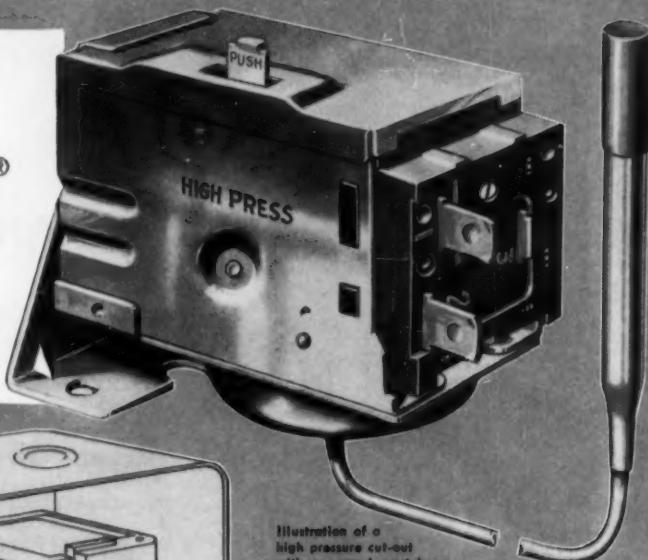
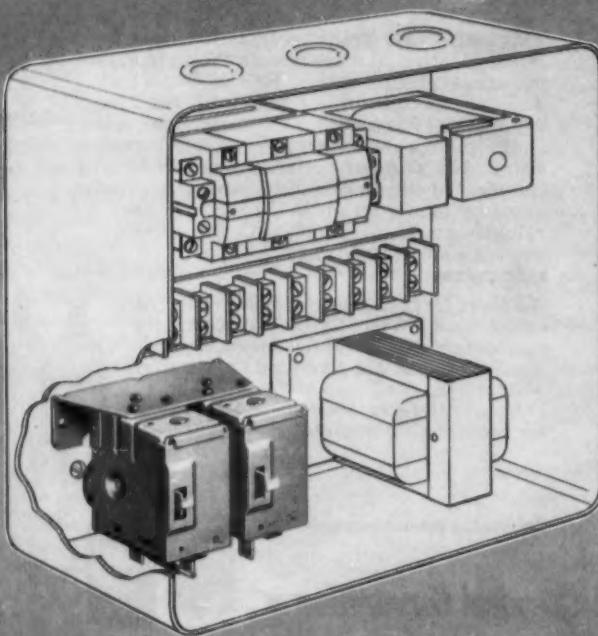


Illustration of a  
high pressure cut-out  
with a manual reset lever

- Automatic or manual reset.
- Switch assemblies for electrical ratings from pilot duty through 18 amperes, full load.
- 7 to 425 psi selective ranges, non-adjustable in the field.
- Screw or quick-connect terminals.

Panel installation of dual pressure with high and low pressure Ranco "G" Controls mounted on a common, single bracket and connected electrically by a jumper. Also, each can be individually mounted on separate brackets, according to panel space.

## How Dry Is Dry? Moisture Indicators Will Tell You

MOISTURE IS A MAJOR PROBLEM in all refrigeration systems using halocarbon type refrigerants.

On Refrigerant-12 systems operating below 32 F, for instance, freeze-up will occur unless the moisture level in the refrigerant is reduced to a very low point. Also, excessive moisture will cause corrosion even under conditions where freeze-up does not occur.

Thorough drying of a system pays dividends in longer life and trouble-free performance.

Exactly how dry a system must be to prevent corrosion has never been positively established. It is generally believed that drying to less than 15 ppm (parts per million) is required for Refrigerant-12. With Refrigerant-22 the prevailing estimates of the necessary degree of dryness range from 10 ppm to about 70 ppm. As a general average, anything less than 45 ppm is acceptable.

These are very low moisture levels. Only 3 drops of water in a 25-lb. refrigerant cylinder is equal to 15 ppm. But with modern manufacturing methods, careful field installation, and the use of driers, these levels are attainable.

The tough question is, how do you know when the system is dry

enough? Even though driers are used, a system may still contain enough moisture to cause trouble. It would be easy for a serviceman to improve his installation methods or determine when to change a drier if he only knew when the system was wet. Quite often he has no way of knowing until it is too late.

To answer this need, a moisture indicator has been developed that reveals any change in moisture content by the change in color of a moisture sensitive paper viewed through a sight glass.

### Operation Is Simple

The operating principle on which this moisture sensitive paper is based is simple. Certain chemical salts absorb moisture to form a hydrate. The color of this hydrate is different than that of the dry or anhydrous material.

One of the most widely known of such salts is cobalt chloride. Its normal color is blue. When it absorbs moisture, however, it forms cobalt chloride hexahydrate, which is pink. If this hydrated form is placed in a very dry atmosphere, or is heated, then the moisture will be driven off and the salt will re-

turn to the blue anhydrous form.

These indicator salts normally change color in a definite range of relative humidity. For example, when exposed to air cobalt chloride changes color at about 20% relative humidity. The point at which the color change takes place varies with the type of chemical salt used, the amount, the carrier material, and the medium in which it is tested.

For use on refrigerating systems the moisture indicator is made by impregnating a porous paper with an indicator salt. The indicator paper is placed in contact with the liquid refrigerant so that it will respond as quickly as possible to changes in moisture content.

Some time is required after installation for the moisture in the system to permeate the indicator paper and for equilibrium to be reached. Normally the color change in a moisture indicator is complete within 12 hours.

In evaluating various materials for use as a moisture indicator, two factors must be considered. First, the degree of color difference between the wet and dry color. Second, the moisture level at which the color change takes place, and the sharpness of the change.

With some indicators, the color difference may not be very pronounced. Also, some indicators require a very high moisture level before the color changes. In some, this change takes place gradually over a wide range of moisture contents.

For use on a refrigeration system, the indicator should change color in the commonly accepted range of moisture levels required to prevent corrosion or freeze-up. For Refrigerant-12, the ideal would be for the indicator to show one

### EFFECT OF TEMPERATURE CHANGE ON ONE TYPE MOISTURE INDICATOR

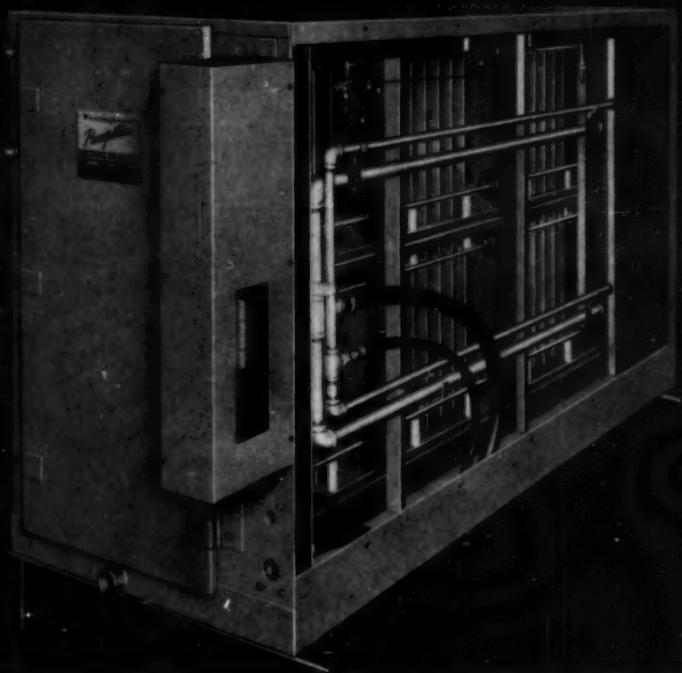
Refrig- erant	Liquid Line Temp.	Dry Color (Green)	Moisture Content in PPM	
			Caution Color (Chartreuse)	Wet Color (Yellow)
12	75°F.	Below 5	5-15	Above 15
12	100°F.	Below 10	10-30	Above 30
12	125°F.	Below 20	20-50	Above 50
22	75°F.	Below 30	30-90	Above 90
22	100°F.	Below 45	45-130	Above 130
22	125°F.	Below 60	60-180	Above 180

# Now Electronic Air Cleaning Units Completely Automatic



Push the button . . . OR . . . set the clock . . .

Westinghouse  
self-contained  
units maintain  
top cleaning  
efficiency  
without  
manual attention



## Automatic Control — pushbutton or clock . . .

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Provides: Efficiency by Soilability (Blackness) Test—up to 97% • Air Velocities—up to 600 ft per minute • Air Capacities—1920 to 28,800 CFM.

\*Sequencing controller operates on predetermined schedule. Choice of 2-, 3-, 5-, 7-, 10-, 14-, 17- or 21-day intervals at any hour.

Call your nearest Sturtevant Division Sales Engineer, or write Westinghouse Electric Corporation, Department J-27, Hyde Park, Boston 36, Mass.

J-80671

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Circle No. 41 on Reader Service Card

color below 15 ppm and a different color above that point. For Refrigerant-22, the ideal indicator would show the dry color below 45 ppm and the wet color above.

Obviously it is desirable to have one indicator paper that can be used for both Refrigerant-12 and Refrigerant-22. This eliminates any possibility of confusion as to which indicator to use for which refrigerant.

### **Is System Wet or Dry?**

Applied in the field, a moisture indicator of this type makes it easy for the serviceman to determine accurately whether a system is wet or dry. By comparing the color of the paper in the indicator installed on the system with a color calibration chart he can obtain a close estimate of the ppm of moisture in the refrigerant.

The color change in this type of moisture indicator is based on the relative humidity or relative saturation of the refrigerant. With both Refrigerants 12 and 22 the amount of moisture required for saturation varies considerably with the temperature. Therefore, the ppm required for a given color change also varies with temperature.

### **Table Shows Results**

The effect of temperature change on one type of moisture indicator is shown in the table presented with this article. Note that for a given color the moisture content more than doubles when the liquid line temperature is raised from 75 to 125 F.

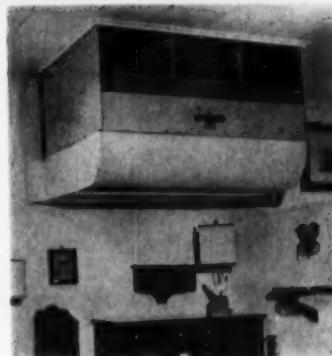
This effect of temperature is worth taking into consideration for careful work, but it is not so serious as to cause difficulty on the average application. On most systems the liquid line temperature is about 100 F. Those which vary appreciably from this average can easily be detected simply by feeling the liquid line. If it is cool, use the 75 F range in reading the moisture indicator; if it is about body temperature, use 100 F; if it is hot, use 125 F.

Most moisture indicators provide

*Continued on page 96*



**LOCATED AT THE REAR** of the shop are the air handling units, ductwork, and air cooled condensing units.



**ONLY COOLING UNIT** inside is this ceiling suspended fan and coil unit used to cool this particular display area.

## **DON'T WASTE SPACE**

HOW WOULD YOU AIR-CONDITION a 15-room building where you could not use any floor space, and suspended units would be objectionable? This was the problem which faced Triangle Plumbing & Heating Co., Carnegie, Pa.

This dealer contracted to air-condition the manor house, largest of a group of buildings known as Beck's Charter Oaks, a shopping place that deals in authentic period furniture, accessories, and decorating.

The management felt that it could not afford to give up any of the valuable floor space, and the presence of modern air-conditioners would deter from the symmetrical arrangement of the furnishings. Also, the noise of the units had to be kept outside so as not to discourage leisurely browsing, or distract the mart's staff of artists and decorators.

The engineering staff of Proie Bros., Pittsburgh air-conditioning distributor, collaborated with Triangle to design a special cooling arrangement for the house.

The entire system, including the main supply ducts, piping, and wiring is outside the building. The only exception is one horizontal blower which is suspended from the ceiling inside.

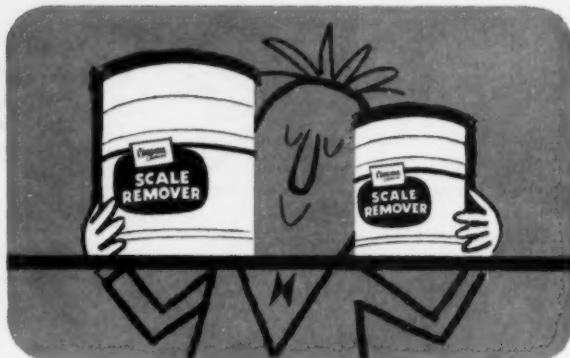
The system consists of four Airtemp 7½-hp, air-cooled condensing units, three vertical, and one horizontal air handling unit. The main supply ducts run along the outside of the house, and branches extend into several rooms.

The condensers and air handling units are located at the rear and on one side of the building. Visitors to the manor house can enjoy the comforts of air-conditioning, and the illusion of stepping into the past is not spoiled.

# "VIRGINIA" Solid Scale Remover works rapidly, economically . . . much more safely EVEN PROTECTS GALVANIZED EQUIPMENT



Tests reveal that "Virginia" Solid Scale Remover is much less corrosive than any other scale remover on the market. A 1-hour immersion test in inhibited "Virginia" Solid Scale Remover solution leaves galvanized strip intact (right), while a popular competitive scale remover completely erodes the surface (left).



This new, dry-acid formulation is packed in 10 and 50-lb. drums. Just empty into the water, stir into solution and it goes to work at once. Equally safe for galvanized, dipped zinc and aluminum water-cooled equipment, "Virginia" Solid Scale Remover offers the added advantage of destroying algae growth.



You will find that "Virginia" Solid Scale Remover is easy to use, too! No lifting and pouring from heavy glass bottles—no danger from splashing or pools of acid solution on the floor—no hazard from broken glass. Once you use "Virginia" Solid Scale Remover, you will discover how easy it is to get rid of scale!



For reliable, efficient water treatment, use "Virginia" chemicals—Solid and Liquid Scale Remover, Water Treatment Scale and Corrosion Inhibitor, Algae-Cides #1 and #2, and Ice Machine Cleaner. Your wholesaler stocks them. Ask about a new service company moneymaker—the "Virginia" Water Treatment Plan.



For free folder, "How to Turn Water into Money," write Refrigeration Division, VIRGINIA SMELTING CO., 292 Jefferson St., West Norfolk, Va.

ESOTOO • V-METH-L • CAN-O-GAS • VASCO-CEL • PERMAGUM • PRESSTITE TAPE  
KWIKWRAP • SUNISO REFRIGERATION OILS • WATER TREATMENT CHEMICALS  
SALES AGENT & REPACKER FOR "FREON" REFRIGERANTS

Available in Canada and many other countries

**VIRGINIA**  
*Chemicals*

by Arthur H. Farr

## Cash In on the Package Heat Pump

AT LONG LAST the key to volume sales of residential heat pump installations is at hand. This season, for the first time, a true heat pump of the self-contained air-to-air type is being marketed. It should unlock the door to a tremendous new market.

For several years, reverse cycle window air-conditioners have been available to the buying public. While these units were limited in operation to little more than a good cooling unit, they did whet the appetite of the consumer for something better.

With the introduction of the attic-type air-conditioner, the next step was to add reversing valves and market this unit as a residential heating and cooling package. This modification of standard equipment was no more successful than the reverse cycle window unit in meeting the demands of the homeowner, but again it stimulated the demand for something better.

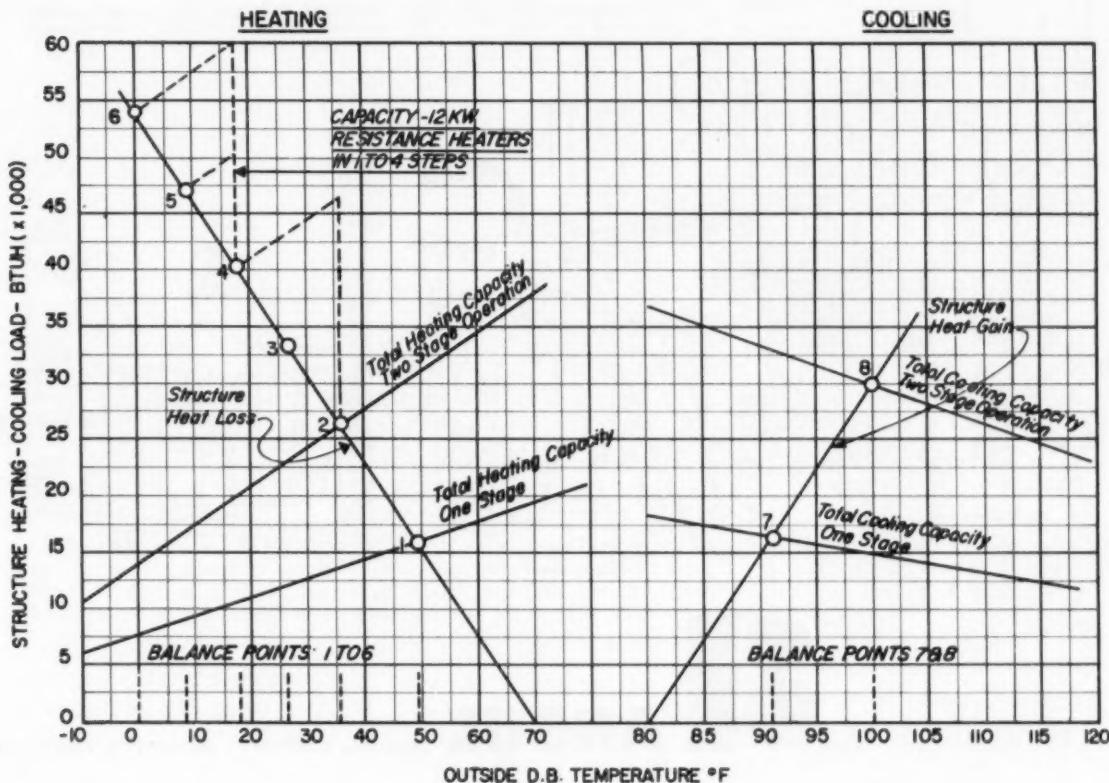
The first true package residential heat pump now available has been designed with an inside coil having a 25% larger surface

area than that of an equivalent unit used on straight cooling. This is necessary to keep head pressures moderate during the heating season, when the inside coil is acting as an air cooled condenser for the refrigeration cycle.

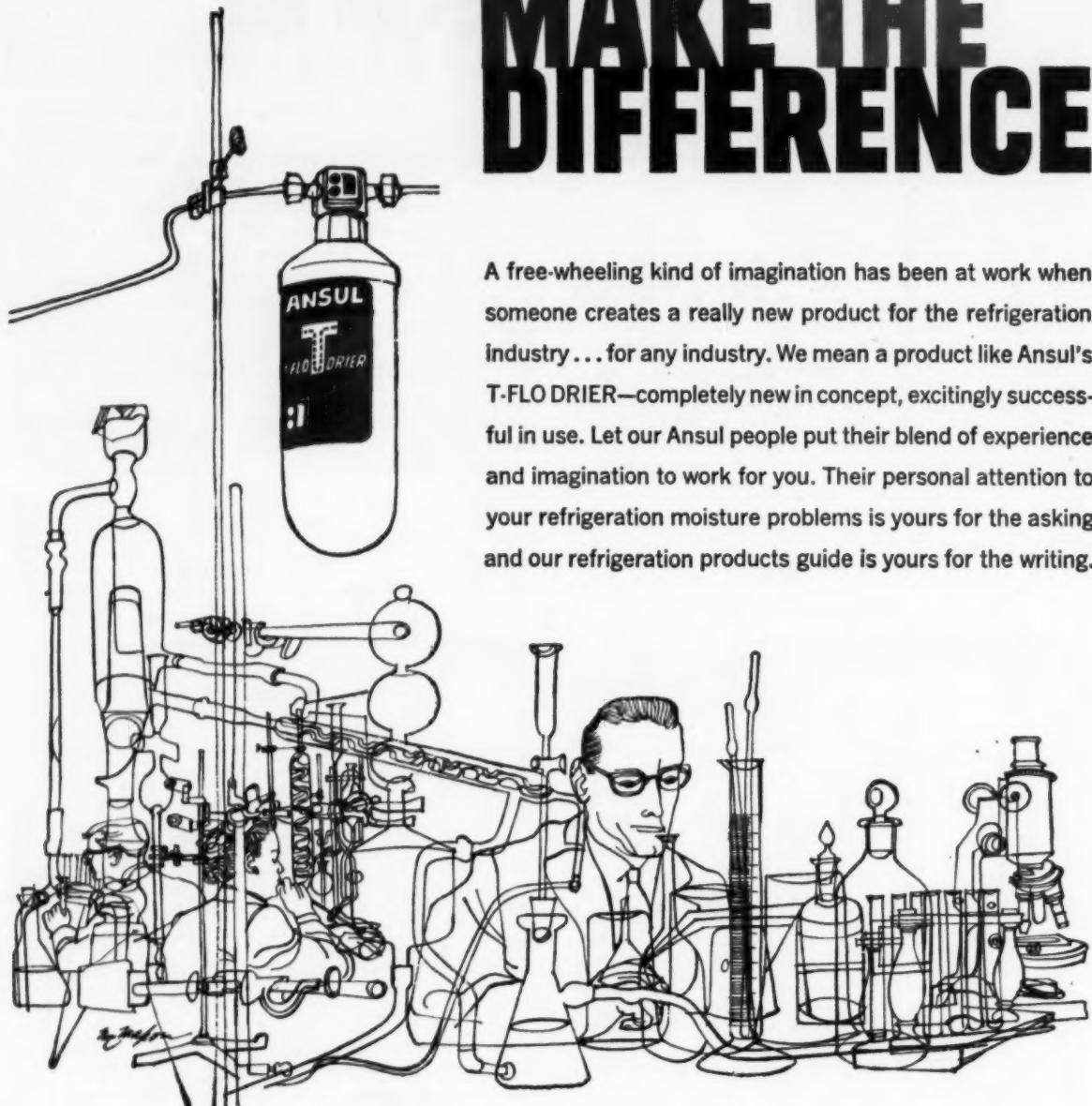
With this larger coil surface it is possible to develop higher Btu capacities on the heating cycle. This makes the unit marketable over a much greater area of the country.

Supplemental electric resistance heaters, arranged to come on in

*Continued on page 67*



# PEOPLE MAKE THE DIFFERENCE



A free-wheeling kind of imagination has been at work when someone creates a really new product for the refrigeration industry... for any industry. We mean a product like Ansul's T-FLO DRIER—completely new in concept, excitingly successful in use. Let our Ansul people put their blend of experience and imagination to work for you. Their personal attention to your refrigeration moisture problems is yours for the asking and our refrigeration products guide is yours for the writing.



**ANSUL**

CHEMICAL COMPANY / MARINETTE, WISCONSIN

FIRE EXTINGUISHING EQUIPMENT / INDUSTRIAL CHEMICALS / REFRIGERATION PRODUCTS / NATIONAL DISTRIBUTORS OF "FREON" REFRIGERANTS  
Circle No. 43 on Reader Service Card

steps, have been added to the heat pump to increase its effectiveness in northern climates. This packaged heat pump unit is available in 2, 3, and 5-hp sizes.

To illustrate the operation of this unit, the heat loss and heat gain of a typical residence was calculated for a wide range of outside temperatures — 0 to 70 F for winter heating and 80 to 100 F for summer cooling. Results of these calculations were plotted as curves on the graph reproduced on page 65.

Next, the heating and cooling capacities of a 3-ton air-to-air heat pump package were plotted as curves which intersect the structure curves.

For heating there are six capacity curves: one for each of the four steps of supplemental electric resistance heat, one for two-stage compressor operation with no supplemental heat, and one for one-

stage compressor operation. The curve intersections, projected down to the outside temperature scale at the bottom of the graph, indicate the six points at which the various stages of the unit's capacity balance with the structure requirements for heat.

The results of these curve intersections are also shown in tabular form below.

For cooling, only two capacity curves intersect the structure line on the graph: one for two-stage compressor operation, and one for one-stage operation. Again the balance points are projected down to the outside temperature scale and the results also are tabulated.

By plotting heat loss and heat gain curves against unit capacity curves, as shown in the graph, it is possible to predict both winter and summer operating costs within fairly close tolerances at various dry bulb temperatures.

#### HEATING CYCLE

Number Compressors Operating	Steps of Supplemental Electric Heat	Btuh Heating Capacity*	Outside Temperature at Balance with Structure
2	4	54,000	at 0 F
2	3	47,500	at 8.5F
2	2	40,000	at 18 F
2	1	33,500	at 26.5F
2	0	26,500	at 35.5F
1	0	16,000	at 49 F

#### COOLING CYCLE

Number Compressors Operating	Btuh Cooling Capacity*	Outside Temperature at Balance with Structure
1	16,500	at 92F
2	30,000	at 100F

\*Btu heating and cooling capacity shown is for outside air temperature shown in last column.

**EDITOR'S NOTE:** For the benefit of those readers who may not be familiar with the process of plotting structure heat loss and structure heat gain curves, Mr. Farr's next article (in the November 1958 issue of REFRIGERATION & AIR-CONDITIONING BUSINESS) will be devoted to this subject.

#### REGION 4 ASRE MEETING SET FOR SEPT. 12-13

September 12-13 has been set for the fifth annual Region 4 conference of American Society of Refrigeration Engineers. The Montreal section, hosts to the confer-

ence, have arranged technical tours and seminars on the 1200-ton cooling system in the hotel, and a technical paper on ice rinks.

Several dinners and city tours have been scheduled in addition to a golf outing and other features.

Circle No. 68 on Reader Service Card

## COMPARE

### "SUPCO 88"

#### OIL ADDITIVE

... and learn why 3,500,000  
refrigerating units  
are now operating with  
SUPCO "88"

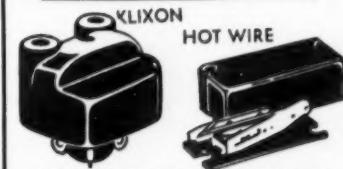
★ Free Frozen Compre-  
sors. (Sealed or Open)

★ Reduces Amperage.  
Prevents Kicking  
Overloads.

★ It Repairs 90% of all  
Defective Blower  
Motors Without  
Removal.

SEE YOUR JOBBER NOW . . . OR WRITE TO  
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1178 E. 180th St. • New York 60, N. Y.

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Your Relay Source...

**SAM HAMMER** INC.

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BROOKLYN 38, NEW YORK

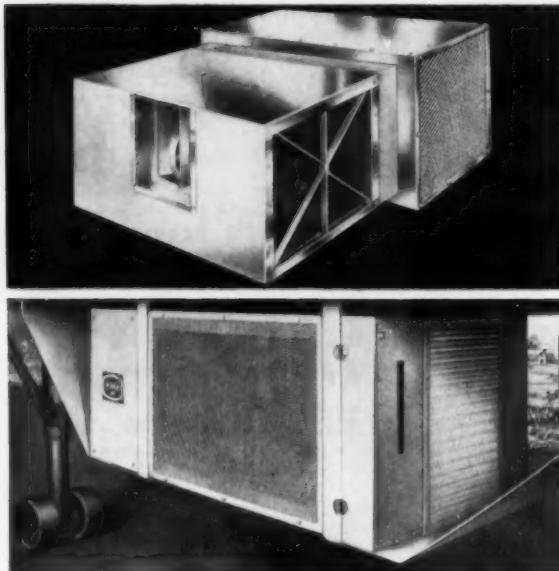
Sold Only Thru Jobbers

## TRANSPORTATION REFRIGERATION PROBLEMS?

HERE'S THE ANSWER!



**DOLE Lektro-Cel**  
FOR UNDERFRAME OR NOSE MOUNT



Completely electric . . . Powered by a heavy duty, light weight, engine-mounted generator . . . Same type of power as nighttime plug-in . . . Full capacity hermetic compressor.

- Blower coil, Cold-Cel Holdover Truck Plates or Truk-Cel Eutectic Blowers can be used.
- Heat-Cel Automatic Hot Gas Defrost on low temperature blower coil systems.
- Heating available for winter.
- Auxiliary truck-mounted electric equipment (pumps, hoists, lights, etc.) operated from same power source.
- Only standard electrical and refrigeration circuits used.

**DOLE REFRIGERATING COMPANY**  
5942 NORTH PULASKI ROAD, CHICAGO 46, ILLINOIS  
103 PARK AVENUE, NEW YORK 17, N. Y.  
Dole Refrigerating Products Limited, 29 Brock St., N., Oakville, Ont., Canada

Write for Engineering Catalog HE



*Lektro-Cel*

Circle No. 46 on Reader Service Card

## USEFUL Literature

(For news of New Products turn to page 74)

**CORRECT BENDING TECHNIQUES** are outlined in pocket-size booklet published by National Electric Products Corp. The booklet, "The Art and Practice of 'on-the-spot' Bending", is by Jack Benfield, inventor of the firm's portable, one-piece NE-Redege Benfield bender. A shrink table included provides the allowance for shrink of all sizes of conduit when objects being saddled range from 1 to 4" in diameter.

Circle No. 188 on Reader Service Card

**ACCESS DOOR HARDWARE**, access doors, and damper hardware are listed in a catalog published by Ventfabrics, Inc. Includes detailed listing of the company's line of latches, hinges, and gasket material.

Circle No. 189 on Reader Service Card

**AIR DIFFUSING GRILLES** of extruded aluminum are presented by Titus Mfg. Corp. in Bulletin LTD which was published by the company. It contains information on selection, application, and performance of grilles under various conditions. Also offers detailed explanation of selecting grilles, and examples of measuring air flow.

Circle No. 190 on Reader Service Card

**DRINK DISPENSERS** are the subject of a folder issued by Everfrost Sales, Inc. Six new soda bars are listed, and component parts are described. Also included is a cost comparison between soda bars and bottled drinks.

Circle No. 191 on Reader Service Card

**SELECTION OF RELIEF VALVES** for commercial refrigeration and air-conditioning applications based on ASA-B9.1 code, is the title of a bulletin (58-28) published by Superior Valve & Fitting Co. Lists specific examples and methods for establishing discharge capacities for all sizes of refrigerant containing vessels. Also gives information for the proper sizing of relief valves.

Circle No. 192 on Reader Service Card

**LOW COST AND HIGH EFFICIENCY** in the production of crushed ice for use in food and drink sales and service is the subject of a new brochure (No. FSB-8). Published by Scotsman Queen Products, Inc., the brochure lists variety of businesses and how they use crushed ice. Also describes company's line of automatic storage and continuous flow models of ice makers.

Circle No. 193 on Reader Service Card

**IF YOUR WORK** involves cutting holes in reinforced concrete or other hard, brittle material, you'll be interested in the catalog available from Truco Masonry Drilling Div., Wheel Trueing Tool Co. Actual on-the-job photos depict numerous drilling situations. Also included are specifications of the firm's varied diamond drilling equipment and accessories.

Circle No. 194 on Reader Service Card

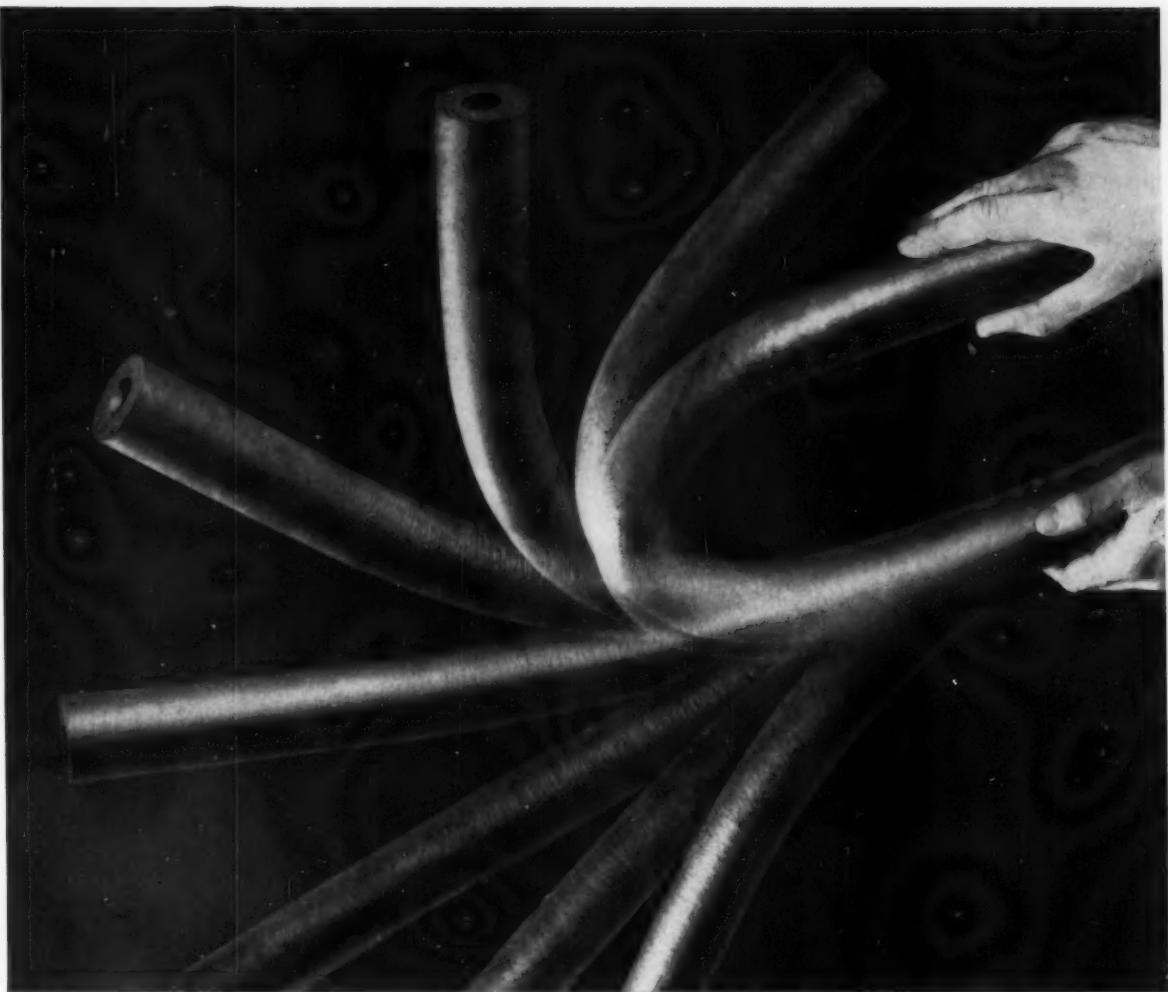
**SELECTION GUIDE** for critical and non-critical areas is featured in Bulletin VAC-12 issued by Vibration Mountings, Inc. Titled, "Vibration Control for Air-conditioning", bulletin charts theoretical efficiency of isolation materials at various operating speeds. Eighteen different products are shown and discussed.

Circle No. 195 on Reader Service Card

**SELECTIVE SPEED DRIVES** are discussed in Century Electric Co. bulletin 11-1, Pl. Motor speed control from alternating current is explained and applications of various drives are illustrated.

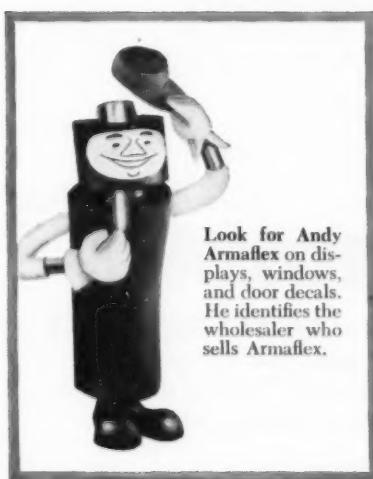
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(More Useful Literature on page 71)



Armaflex is extremely flexible, follows contours of piping or tubing without special cutting.

## Highly flexible Armaflex pipe covering goes on fast, cuts labor costs in half



Look for Andy Armaflex on displays, windows, and door decals. He identifies the wholesaler who sells Armaflex.

So flexible it can be tied in knots, Armaflex pipe covering helps you speed the insulation of fluid cooling lines. It reduces labor costs as much as 50% compared with the cost of applying conventional insulations to pipes and fittings. Armaflex can be slipped on pipe or tubing before connections are made. It follows contours readily. Or, the covering may be slit lengthwise, snapped in place, cemented at the joints. Fitting covers are quickly fabricated from miter-cut pieces.

Made of foamed plastic, Armaflex has a closed cell structure that seals out air or moisture. No separate vapor barrier is needed. Armaflex is an un-

usually efficient insulator, with a k-factor of 0.28 at 75° mean temperature.

Because Armaflex now comes in three wall thicknesses —  $\frac{3}{8}$ ",  $\frac{1}{2}$ ", and  $\frac{3}{4}$ " — you can apply the economical amount\* of insulation needed to stop condensation on lines operating down to zero. Armaflex is available in 6' lengths and sizes up to 3" I.P.S. For larger piping, Armaflex sheets are used.

\* Recommended Armaflex thicknesses for various service conditions are contained in a free descriptive booklet. For your copy, write Armstrong Cork Company, 2209 Rumford Avenue, Lancaster, Pennsylvania.

**Armstrong** INSULATIONS

Circle No. 47 on Reader Service Card

# ANEMOSTAT reports on All-Air High Velocity Systems



Anemostat Corporation of America pioneered the development of All-Air High Velocity Systems. Anemostat leadership in high velocity systems has resulted in more than 500 fine installations using more than 60,000 units in office buildings, schools, hospitals, auditoriums, etc. throughout the United States, Canada and Mexico.

Anemostat Selection Manual No. 60 contains complete information on the many architectural and engineering advantages of the Anemostat All-Air High Velocity System.

Selection Manual No. 60 will be sent to you promptly on request.

## ANEMOSTAT®

**DRAFTLESS Aspirating AIR DIFFUSERS**

ANEMOSTAT CORPORATION OF AMERICA

10 EAST 39TH STREET, NEW YORK 16, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

Circle No. 48 on Reader Service Card

## USEFUL LITERATURE

Continued from page 68

**"NO FROST" REFRIGERATION** is described in Bulletin 105 by Niagara Blower Co. Diagrams and photos show methods used for food freezing, chilling and warehouse refrigeration on large scale without frost or ice formation. Describes principles and methods of operation.

Circle No. 197 on Reader Service Card

**HOT AND COLD DECK** high-pressure air handling equipment is presented in a bulletin published by Drayer-Hanson, Div. of National-U.S. Radiator Corp. One model is illustrated plus dimensional cross-sections. Fan performance curves are given to simplify selection of proper fans.

Circle No. 198 on Reader Service Card

**THE WORLD OF MR. FLEXON** is the title of a booklet prepared by Flexonics Corp. Includes description of the company's line of flexible tubing, hosing, and joints. Shows company's products in use in a wide variety of industries.

Circle No. 199 on Reader Service Card

**UNIT COOLERS** are described in a bulletin (118-58) issued by Tenney Engineering, Inc. Lists complete specifications and dimensions for nine models. Also gives sales features, warranty, and service information.

Circle No. 200 on Reader Service Card

**AMMONIA PRODUCTS** are the subject of a catalog (81C8b) published by Recold Corp. The catalog includes basic information on sizes, ratings, overall dimensions, and shipping weights. Also has photos of the company's line of ammonia products.

Circle No. 201 on Reader Service Card

**USER ADVANTAGES** are listed in a bulletin which describes new type of packaging for copper water tube. Prepared by Wolverine Tube, Div. of Calumet & Hecla, Inc., the literature lists important features of the new carton.

Circle No. 202 on Reader Service Card

**ALL-INCLUSIVE SALES** Catalog No. A-583 now is available from Pyramid Instrument Corp. on its Amprobe, snap-around volt-ammeter-ohmmeter line. Applications, price lists, and specifications are given.

Circle No. 203 on Reader Service Card

**INSTALLATION TIPS** are given in Bulletin FP-3 covering "Flexi-pipe" made by American Metal Hose Div., American Brass Co. Product is described as a flexible, phosphor bronze connector for any heating installation. Complete specifications are listed.

Circle No. 204 on Reader Service Card

**THREE BASEBOARD LINES** are analyzed in No. 1231A baseboard catalog from Dunham-Bush, Inc. Complete engineering information is given. Roughing-in data, capacities, design, methods of installation, and cut-away drawings showing typical installations are included.

Circle No. 205 on Reader Service Card

**KEEP EGG QUALITY HIGH** for bigger profits with Model EH for egg holding room is theme of booklet from Master-Bilt Refrigeration Mfg. Co. Diagram also gives necessary details on how to build an efficient, low-cost, egg-cooling room.

Circle No. 206 on Reader Service Card

**TIME-SAVING** methods of sealing duct insulation joints are offered in folder by Dutch Brand Div. of Johns-Manville. Booklet also points the way to lower costs in every application involving the forming, holding, and sealing of air duct insulation.

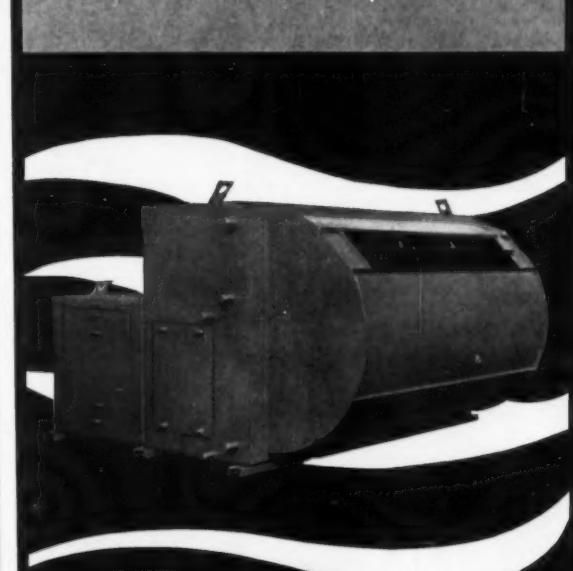
Circle No. 207 on Reader Service Card

(More Useful Literature on page 72)

**DRAYER HANSON**

# NEW "HCD"

PACE-SETTING NEW D-H HIGH PRESSURE HOT AND COLD DECK AIR HANDLING UNITS HAVE INTERNAL VIBRATION ISOLATION!



STANDARD MODELS 5,000 TO 25,000 CFM.  
UP TO 8" TOTAL STATIC PRESSURE. HIGH PRESSURE CONSTRUCTION. CIRCULAR DISCHARGE PLENUM ELIMINATES BREATHING. DUAL FORWARD-CURVE FANS; BACKWARDLY-INCLINED, OPTIONAL, DIFFUSERS FOR EVEN AIR DISTRIBUTION. OPTION HORIZONTAL/VERTICAL DISCHARGE. PROMPT DELIVERY. MUCH MORE!

**drayer-hanson**  
DIVISION OF NATIONAL U.S. RADIATOR CORP.  
3301 MEDFORD STREET  
LOS ANGELES 63, CALIFORNIA  
CABLE: CLINCONI LOS ANGELES

Circle No. 49 on Reader Service Card

**COMPARE FIRST  
YOU'LL SELL THE  
COMPLETE LINE  
FROM  
LA CROSSE**

DRY STORAGE  
BOTTLE COOLER

This "New Look" La Crosse Bottle Cooler is tops in modern design and efficiency . . . beautiful grey ham-mertone baked enamel finish . . . 5½" wide mouth bottle opener and cap catcher. Available all sizes.



Cubemaker



Reach-In Cooler

Supreme Milk or  
Bottle Cooler

Brainboard

**LA CROSSE COOLER COMPANY**

3002 LOSBY BOULEVARD SOUTH, LA CROSSE, WISCONSIN



EXPORT OFFICE: 125 BROAD ST., NEW YORK • CABLE: EXIMPORT

**2 facts you should know**

about  
**LA-CO<sup>®</sup>**  
**FLUX**  
(REGULAR)  
For All Soft Solders



- 1 **NON-ACID**—Safe for work and workers.
- 2 **SELF-CLEANING**—Fluxes thru rust, oil, etc.

Yes, for surer, safer, faster work LA-CO FLUX offers an unbeatable combination. Its powerful fluxing action needs no scraping or wire-brushing—provides a perfect union of solder and metal. Yet it contains no acid—will not pit, corrode or stain metals or solder or harm workers. Try it just once and you'll be enthusiastic.

LA-CO specialized fluxes available for all needs. Let our research department help on any fluxing problem, without cost or obligation.

Your supplier has LA-CO FLUX; or write for sample.



**LAKE CHEMICAL CO.**

3082 W. Carroll Ave., Chicago 12, Ill.

Circle No. 91 on Reader Service Card

**USEFUL LITERATURE**

*Continued from page 71*

**ADD-ON EVAPORATOR COILS** for use with forced air furnaces are featured in Catalog No. 290 from C. A. Olsen Mfg. Co. Its depicted "Luxaire" line also reviews 2, 3, and 5-hp, air-cooled, condensing units. In four colors, the catalog also outlines performance ratings.

Circle No. 208 on Reader Service Card

**BONDED LINE** of heating and air-conditioning equipment by Coleman Co., Inc., is viewed in Form No. A-1046. Numerous illustrations show how units are applied in the home and where. Specifications and dimensions are included.

Circle No. 209 on Reader Service Card

**"FREE SELLING COURSE"** is explained in Duro-Dyne Corp. literature on its new duct tape. Features of the tape are listed and various sheet metal specialties offered by the firm are illustrated.

Circle No. 210 on Reader Service Card

**AIR-CONDITIONING UNITS** offered by American Air Filter Co., Inc., are described in a 54-page booklet (bulletin No. 786). Discusses design features of the company's new line, description of components, and details of selecting components to build up a unit to meet exact job requirements. Also gives capacities, dimensions, and suggested specifications.

Circle No. 211 on Reader Service Card

**AUTOMOBILE SERVICE STATIONS** which have been successful in selling ice cubes are listed in a brochure (SSB-8) issued by Scotsman Queen Products, Inc. Cites several examples of increased earnings through the sale of ice cubes in service stations. Also shows models available with capacities and dimensions.

Circle No. 212 on Reader Service Card

**PHYSICAL DESCRIPTION** of Aero vapor condenser by Niagara Blower Co. is given along with other useful data in Bulletin 139. Explained are the functions of the machine which is designed to condense vapors in a closed system, with seven or eight degrees sub-cooling, maintaining a high vacuum.

Circle No. 213 on Reader Service Card

**ELECTRONIC AIR CLEANERS** are described in Folder E77. Published by Trion, Inc., the literature includes principles of operation, uses, and various types of the company's products used in electronic air cleaning.

Circle No. 214 on Reader Service Card

**CLOSED-CASE MERCHANTISER** model DEL is described in a bulletin (C-11) from Warren Refrigerators. Includes sales features and possible uses. Lists construction of major components and complete specifications and dimensions.

Circle No. 215 on Reader Service Card

**INFORMATION ABOUT** commercial and refrigeration grades of anhydrous ammonia is given in a bulletin (A-3819) by Sun Oil Co. Lists physical and chemical properties, specifications, and the company's shipping and service facilities.

Circle No. 216 on Reader Service Card

**EXPLODED ILLUSTRATIONS** show design and construction details of each component used in 1/3 and 1-hp single-phase motors in A. O. Smith's colorful booklet. The motors are for belt-driven fans and blowers. Types and ratings, voltages, operational features, mountings, and dimensions of the full line are included.

Circle No. 217 on Reader Service Card

**HIGH VELOCITY SYSTEMS** are the subject of a folder published by Connor Engineering Corp. Describes the company's line of high velocity valve attenuators including principle and sales features. Also shows cutaway view and describes major component parts.

Circle No. 218 on Reader Service Card

if it's a  
water cooled  
system...

THERE'S A

## MYERS centri-thrift pump

THAT'S RIGHT FOR THE JOB

for walk-in coolers • food freezers • frozen food lockers • chillers • air conditioning • cooling towers

Ruggedly built for continuous duty, the general duty Myers Centri-Thrift features an all bronze impeller, removable wearing ring, and stainless steel shaft. The line offers a full range of sizes: from 1" x 1 1/4" through 2" x 2 1/2" and from 1/3 to 7 1/2 horsepower. Capacities to 240 GPM, heads to 140 feet.



Model 150 M  
Shown with rotary seal (available with stuffing box)



Model 125 M  
150 M  
Shown with stuffing box (available with rotary seal)



Model 100 M—Rotary seal only



Model 125B  
150B-200B  
Shown with stuffing box (available with rotary seal)



Model 100B  
Rotary Seal only

Write today for  
Catalog Section  
210 covering the  
complete Myers  
Centri-Thrift line.



# Myers® PUMPS

THE F. E. MYERS & BRO. CO.  
9404 Orange St., Ashland, Ohio • Kitchener, Canada



Circle No. 52 on Reader Service Card  
BUSINESS • SEPTEMBER 1958



## Plastic Coating Stops Costly Condensation Drip and Rust

THE COSTLY PROBLEM caused by dripping from this sweating pipe was permanently solved with one easy and inexpensive application of NoDrip Plastic Coating. Sweating pipes, ceilings, air ducts and other metal equipment are also completely protected against rust and corrosion by low cost NoDrip.

NoDrip Plastic Coating acts immediately to insulate and protect. One application adds many years of service life to metal equipment. NoDrip is also resistant to acid, alkali and brine...protects concrete, brick, plaster, tile, wood or composition surfaces.

Easy application requires no special equipment or skill. Anyone can apply NoDrip with brush, trowel or spray. Stop your condensation problem now! Get full details without delay.

**J.W. Mortell  
COMPANY**

32-PAGE NoDrip DATA HANDBOOK  
Complete with photographs, charts and technical information to solve your condensation problem. Write today.

FREE

Available at leading refrigeration supply houses

J. W. MORTELL Co., 553 Burch St., Kankakee, Ill.

Please send my FREE copy of the NoDrip Data Handbook.

Name \_\_\_\_\_

Company \_\_\_\_\_ Title \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Circle No. 51 on Reader Service Card

# NEW Products

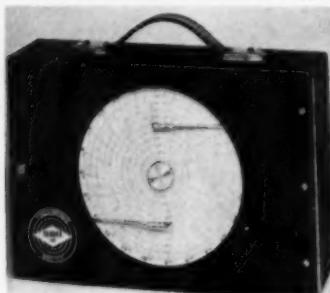
(For news of Useful Literature turn to page 68)

## Recording Instruments

**Product:** Thermographs and hygrothermographs.

**Manufacturer:** Serdex, Inc., Boston, Mass.

**Features:** Designed for plant rather than laboratory use. Both instruments have 6" chart for detailed analysis of area condition. Hygro-



graph guaranteed accurate within 5% over a 15 to 95% rh range, and a 32 F to 130 F temperature range. Correction chart adapts the hygrograph to temperatures as low as -30 F. Thermograph is accurate within 2% over a range of zero degrees to 100 F. Both units available in spring-wound or electric drive. Either can be purchased separately and other unit added later.

Circle No. 120 on Reader Service Card

## Boiler-Burners

**Product:** Line of gas and oil fired boiler-burners.

**Manufacturer:** Edwards Engineering Corp., Pompton Plains, N.J.



**Features:** Available in eight models with 585 to 4000 sq.ft. ratings, gross output ratings from 100,000 to 600,000 Btu/hr. Pre-packaged and pre-wired components, may be

obtained with completely pre-assembled motorized zone control valves. Built-in automatic air elimination devices are included in all boilers.

Circle No. 121 on Reader Service Card

## Evaporative Condenser

**Product:** "Dri-Fan" evaporative condenser (Series DFA).

**Manufacturer:** Recold Corp., Los Angeles, Calif.

**Features:** Nominally rated through 193 tons for ammonia, and 233 tons for Freon. Measures 94" wide. Designed to be transported by truck in one piece. Can be completely disassembled and reassembled on the job if necessary. Blowers may be easily detached from the unit. Also available with the unit are modulating dampers with controls to regulate head pressures. Spray section doors optional.

Circle No. 122 on Reader Service Card

## Rubber Tubing

**Product:** Closed cellular rubber tubing insulation.

**Manufacturer:** Rubatex Div., Great American Industries, Inc., Bedford, Va.

**Features:** Provides positive insulation for all warm or cold fluid



piping, to keep temperatures constant while preventing condensation on heating or cooling tubes. Available in wall thicknesses of 3/16, 1/4, 3/8, 1/2, and 3/4" with all standard diameters from 3/8 to 4 1/8". Can be ordered ready to slip directly onto piping or slit lengthwise to be sealed to piping with an adhesive. Can be installed on piping with swings and bends up to 180° angle without additional cutting or fitting. Five foot lengths available on all inside diameters. Random lengths available up to and including 1 1/8" I.D.

Circle No. 174 on Reader Service Card

## Cooling Coil

**Product:** Cooling coils for beverage containers.

**Manufacturer:** Refrigeration Appliances, Inc., Chicago, Ill.

**Features:** Designed for retail beverage industry, beverage containers and other back bar applications.



Panel type high velocity units offer volume and capacities of 90 to 250 Btu/hr at 1 F td. Will cool from 16 to 60 cases of 12-oz. bottles. Smallest units measure 13 1/2" high, 12 1/4" wide, 4 5/8" deep. Measurements for larger units, in the same order, are 21 1/2 x 17 x 7".

Circle No. 123 on Reader Service Card

## Wall Display Case

**Product:** Self-contained beverage and dairy wall case (Model LDW).

**Manufacturer:** Evans Mfg. Corp., Mt. Vernon, N.Y.

**Features:** Extra long doors allow more vision; all-steel construction. Refrigeration system engineered for proper temperature throughout the case. Six levels of display consisting of heavy duty wire adjustable shelves. Ready to plug in. Available in lengths of 4 1/2, 6, 8'.

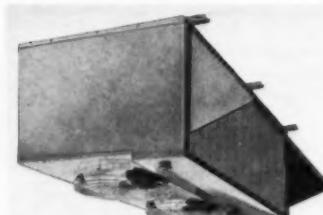
Circle No. 124 on Reader Service Card

## Heat Trap Coil

**Product:** Line of low-temperature, heat-trap coils.

**Manufacturer:** A. H. Witt Co., Inc., Los Angeles, Calif.

**Features:** Requires only low-cost, single-pole time clock for auto-



matic defrosting. Designed for freezing and storing frozen food and ice cream. Requires no re-evaporation

# TWO TO FIFTY

**LARKIN  
COOLING TOWERS  
ARE AVAILABLE  
IN 18 MODELS—  
2 TO 50 TONS  
CAPACITY**

## Success is Built On These Features

- All models available with propeller fan. Centrifugal blower optional on all models through 20 tons
- Wetted surfaces are of all-heart redwood, with nailless, interlocked construction, and are easily removed
- More wetted surface assures conservative ratings
- Bolted construction—unit is easily dismantled in the field all the way down to the sump
- Panels are 16-gauge and sump is 12-gauge steel
- Entire unit finished with epoxy base, zinc-chromated primer, and two coats of melamine baked-on enamel
- Mastic-coated interior
- Intake screen available as optional equipment
- Two- and three-ton models with fan have direct-drive, totally-enclosed motors. All other models are belt-driven with drip-proof motors
- Propeller fan and blower assembly are easily inter-changeable in the field
- Centrifugal blowers have self-aligning graphited bronze sleeve bearings mounted on outside for easy lubrication
- Belt-driven propeller fans have oil-impregnated bronze bearings with oil line and cup for easy oiling
- Stainless steel shafts on belt-driven propeller models
- Blowers and propeller fans are hot-dip galvanized and dynamically balanced after fabrication
- All-bronze float and float valve
- Gravity-type distribution basin—low pumping head over tower
- Distribution basin cover supplied as standard equipment
- Water outlet in sump has large strainer and anti-cavitation plate, easily removed for cleaning

From every corner of America has come high praise for the LARKIN Water Saver Cooling Tower because it is meeting the needs of users so well, so economically.

The LARKIN Water Saver is now available in 2, 3, 5, 8, 10, 16, 20, 25, 30, 40, and 50-ton models. Compare the features of these quality

units and see why they have grown so fast in popularity.

And remember, the LARKIN Water Saver is also a money-saver—sells at a price that gives you a competitive edge.

Get in touch with your wholesaler now, or write us for additional information.



Circle No. 53 on Reader Service Card

or special plumbing. Available in 17 models ranging in Btu capacities of from 1,800 to 38,000.

Circle No. 125 on Reader Service Card

### Time Switch

**Product:** 1500 Series time switch for use with commercial heating and ventilation.

**Manufacturer:** Paragon Electric Co., Two Rivers, Wis.

**Features:** Switches have 96 self-retaining trippers in 24-hour dial.



Operation for any 15-minute period throughout day is obtained by sliding tripper in or out with fingers. Can be supplied with cutout attachment geared to drive to prevent it from getting out of synchronization. Measures 10 x 5½ x 4".

Circle No. 126 on Reader Service Card

### Spot Merchandiser

**Product:** Self-contained spot merchandiser (Model YSRS4).

**Manufacturer:** Tyler Refrigeration Corp., Niles, Mich.

**Features:** Shelf area of 20 sq. ft., display capacity of 27 cu.ft. Con-



densing unit is located at the top for full capacity lower shelf area. 12 and 18" shelves adjustable on 2" centers. Shelves can be removed to convert to mass displays. Welded steel shell construction; fluorescent lighting; complete price tag moulding on each shelf. Available in a selection of nine colors plus white.

Circle No. 127 on Reader Service Card

### Drink Dispenser

**Product:** Automatic drink dispenser.

**Manufacturer:** Scotsman-Queen Products, Inc., Albert Lea, Minn.

**Features:** Makes and stores crushed ice automatically. Dispenses



carbonated beverages from either of two or three fountain heads. Ample counter space for storage of fountain equipment. Dispenser also has both cold and carbonated water taps.

Circle No. 128 on Reader Service Card

### Winter Conditioner

**Product:** Oil-fired winter air-conditioner, designated Comet 571 series.

**Manufacturer:** Thatcher Furnace Co., Garwood, N. J.

**Features:** Combustion chamber made of lightweight, unbreakable refractory fibres designed to absorb sound and insure low heat conductivity, according to manufacturer. Special knockout is provided on each side with built-in filter rack for cold air return. Two adjustable air bands provide quick and easy control of air-oil mixture for top combustion efficiency.

Circle No. 129 on Reader Service Card

### "Tong Test" Ammeter

**Product:** "Tong Test" ammeter.

**Manufacturer:** Columbia Electric Mfg. Co., Cleveland, Ohio.

**Features:** Measures both a.c. and d.c. Said to have larger damping chamber for each scale range



which makes readings easier by providing improved damping characteristics. Insulated operating trigger and plastic handle. Readings are obtained instantly when user presses trigger. Tong snap around electrical conductor without breaking circuit or insulation. Available in eight different. Measures up to 1000 amps.

Circle No. 130 on Reader Service Card

### Lo-Temp Display Case

**Product:** Low temperature display case.

**Manufacturer:** C. Schmidt Co., Cincinnati, Ohio.

**Features:** Glass front and top for the display of frozen bakery prod-



ucts, ice cream novelties, frozen specialties, and frozen desserts. Will maintain temperatures from -10 F to -15 F. Measures 49" long, 31¾" deep, 50" high.

Circle No. 131 on Reader Service Card

### Hot Water Dispenser

**Product:** Hot water dispenser. (Model BHL).

**Manufacturer:** Temprite Products Corp., Birmingham, Mich.

**Features:** For use in preparing instant coffee, tea, and soups. Food



storage locker attached to inside of door holds up to 200 individually packaged servings of instant beverages or foods. Door locks to conceal and protect food. Built-in coin box is provided. Finished in mist grey baked enamel. Measures 12" square by 36" high. Can be easily moved to any electrical outlet. No plumbing or drain connections required. Bottled

water is used. Capacity is rated at 60 six-ounce cups per hour of 190 F water, or 120 six-ounce cups hourly of 165 F water.

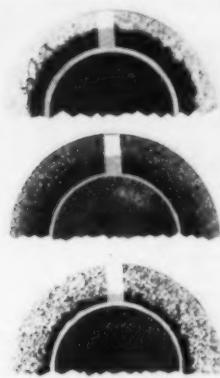
Circle No. 132 on Reader Service Card

#### Cork Gasket

**Product:** Cork gasketing material ("Uniphase Cork") designed to eliminate seepage and leakage of liquids and gases.

**Manufacturer:** Armstrong Cork Co., Lancaster, Pa.

**Features:** Made with continuous phase elastomeric binder that surrounds and embeds cork particles. Greater resistance to contained fluids



than other resilient gasket materials because binder more closely approaches chemical inertness of cork itself, according to manufacturer. Said to seal perfectly at flange pressures as low as 100 psi. Flange loads as high as 4,000 psi will not crush material or cause it to extrude, manufacturer claims.

Circle No. 133 on Reader Service Card

#### Reach-In Refrigerator

**Product:** Sliding door reach-in refrigerator (Model 4G).

**Manufacturer:** Jordon Commercial Refrigerator Co., Philadelphia, Pa.

**Features:** Available in stainless steel or white enamel exteriors in



24 and 32" depths. 50" wide sliding door. Larger glass display area, greater strength and sliding ease to promote self service for dairy products and beverage merchandising. Ceiling mounted blower coil does not detract from usable shelf space.

Circle No. 134 on Reader Service Card

#### Snap-On Insulation

**Product:** "Urethane" snap-on thermal insulation.

**Manufacturer:** Allied Chemical Corp., New York, N.Y.

**Features:** Designed for service between -200 F and +250 F. Will not fray, crumble, or break in han-

dling or disintegrate when subjected to water. Preformed to fit pipelines and fittings. Outside diameter is

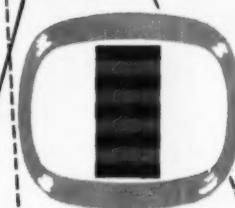
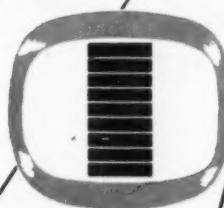


such that it will nest correctly with a second layer. Can be supplied with factory-applied moisture vapor bar-

**Simplest, most economical way  
to detect moisture in your  
refrigerant systems!**

Positive  
sealing

**LIQUID EYE® INDICATOR**  
featuring the built-in  
**MOISTURE-REACTOR**



**It's GOOD!**

The MOISTURE-REACTOR is composed of alternate, permanent and changing (Reactor) color bars. When all the bars appear the same color (green) — it's good — there's no moisture in system.

**It's BAD!**

If moisture enters the system, every other color bar changes from green to yellow — then it's bad — the dehydrator should be replaced. When the system is moisture-free again, the Reactor color bars will change back to their original solid green color.

No more guesswork about the condition of your F-12 and F-22 refrigerant systems. No installation problems either.

*Now you can get both in the same unit*

**...LOWEST COST MOISTURE-REACTOR PROTECTION  
PLUS ALL THE PROVED LIQUID EYE FEATURES!**

CONTACT YOUR WHOLESALER TODAY



**Allin Manufacturing Company**

410 NORTH HERMITAGE AVE. • CHICAGO 22, ILLINOIS

*Over 1,000,000 Liquid Eyes sold to date!*

Circle No. 54 on Reader Service Card

rier, but may also be supplied with a felt paper jacket for outdoor use. Not affected by high humidity, will not rot or decay, and is vermin-proof. Low density and K factor. Available in standard or special preformed sections, or flat blankets in various sizes and thicknesses.

Circle No. 135 on Reader Service Card

### Electric Hammer

**Product:** Model H-812A,  $\frac{1}{2}$ " capacity electric hammer.

**Manufacturer:** Milwaukee Electric Tool Corp., Milwaukee, Wis.

**Features:** Weighs just 4 lbs. and only  $11\frac{1}{4}$ " long. Adjustable blow

and tool saving idling action. Impact is adjustable quickly from light to heavy. Twist of knurled collar near chuck sets force of blow and main-

assorted rawl drills, two rawl drill chucks, all-purpose chisel, and sturdy carrying case.

Circle No. 136 on Reader Service Card



tains it until reset. Extremely useful in overhead or close quarter work such as installing duct work, piping, and wiring. Operates on regular 15-amp, 115-volt current. Includes six

*Presenting:*

*The NEW Serviceman*

*"Super-heat" Thermometers*

### Now check superheat

**...EASIER... FASTER... BETTER**

Now comes a revolutionary development in superheat testing. The kit illustrated here gives you the easier, faster, and above all the *more accurate* superheat readings you need for that all-important adjusting and setting of the expansion valve.

All the difficulties of testing with glass tube thermometers—positioning, reading, costly breakage—are wiped out. The small bulbs of these distant reading *dial* thermometers are easily attached exactly where they should be. The distant reading feature permits placing the dials where they can be readily seen and compared. The widely spaced *one-degree* markings in the testing zone assure far more accurate reading than is possible with the closely-spaced markings of glass tube thermometers.

Note the many features described opposite—particularly the method of insulating against ambient temperature... which assures more accurate readings... better results.

At their moderate price you can own these long-lived "Super-heat" Thermometers at a fraction of the cost of using the breakable, short-lived kind!

*Write for facts or See Your Wholesaler*

**MARSH INSTRUMENT CO.** Sales Affiliate of Jas. P. Marsh Corporation  
Dept. P Skokie, Ill.

Marsh Instrument & Valve Co. (Canada) Ltd., 8407 103rd Street, Edmonton, Alberta • Export Dept., 3501 Howard St., Skokie, Ill.

**MARSH** *Refrigeration Instruments*

Circle No. 55 on Reader Service Card

### Unit Coolers

**Product:** "Space Miser" normal and low temperature unit coolers.

**Manufacturer:** McQuay, Inc., Minneapolis, Minn.

**Features:** Normal temperature unit available in four models from 1000 to 2300 Btu/hr at 10 F td, and is designed to balance with nominal  $1\frac{1}{5}$ ,  $\frac{1}{4}$ ,  $\frac{1}{3}$  and  $\frac{1}{2}$  hp condensing units. Low temperature



available in three models from 1400 to 2800 Btu/hr at 10 F td, designed to balance with nominal  $\frac{1}{3}$ ,  $\frac{1}{2}$  and  $\frac{3}{4}$  hp low temperature condensing units. Automatic defrost when combined with electric timer and four way valve. All models constructed to create maximum air turbulence for most efficient heat transfer. Heavy gauge aluminum prevents rust and withstands rough treatment. Light-weight simplifies installation in frozen food cabinets and reach-ins.

Circle No. 137 on Reader Service Card

### Gas-Fired Furnace

**Product:** Sectional-type, heavy-gauge furnace in three models: low-boy, counterflow, and hi-boy.

**Manufacturer:** Thermo-Products, Inc., North Judson, Ind.

**Features:** Output at bonnet of 84,000 Btu. Multiple heat exchanger with individual burner for each section. Said to have 100% safety shutdown for all gases and controls that are factory assembled and completely wired.

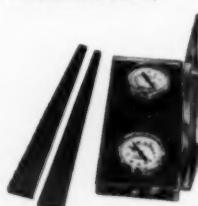
Circle No. 138 on Reader Service Card

### Club Bar

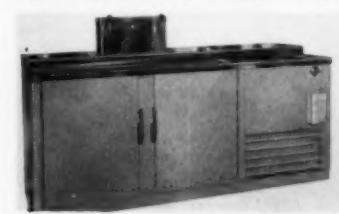
**Product:** Model 3KMC club bar.

**Manufacturer:** Nor-Lake, Inc., Hudson, Wis.

**Features:** Mug or bottle chilling compartment plus keg storage.



Thermometers and "wrappers" are neatly held in durable, transparent plastic box with convenient hinged cover, measures only  $3\frac{1}{2}$ " x  $8\frac{1}{2}$ " x  $1\frac{1}{4}$ ".





available, where insulation has lost its efficiency, or where service on the equipment has been increased beyond the point for which it was designed. Mounted on truck engine, generator supplies single or three-phase current to the condensing unit. Circle No. 142 on Reader Service Card

#### Spot Display Case

**Product:** Four-shelf spot display (Model XD-5-S/C).

**Manufacturer:** Warren Refrigerators, Atlanta, Ga.

**Features:** Designed for use in air-conditioned stores. Glass end



wings provide better display. Has low front and neat appearance. Completely self-contained, requires no

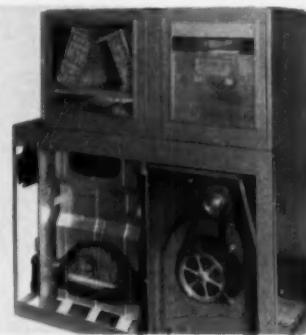
drain. 17-cu.ft. capacity. Refrigerated area has three shelves. Two upper shelves are adjustable to three positions. Fluorescent lights illuminate the three display areas. Measures 58" high, 60" long, 43" deep. Circle No. 143 on Reader Service Card

#### Year-round Unit

**Product:** Year-round residential air-conditioner.

**Manufacturer:** York Corp., York, Pa.

**Features:** Built-in electronic filter with heating, cooling, humidifying and dehumidifying in compact



unit measuring 59 x 51 x 27". System consists of gas-fired warm air furnace designed to be operated with or without the electrostatic air cleaner or the air-conditioner cooling coils. Units are separately designed to fit on top of furnace replacing part of the air ducts.

Circle No. 144 on Reader Service Card



## NEW!

### KMP LITTLE GIANT MOLECULAR SIEVE ALL-PURPOSE DRIER

Made with 100% Molecular Sieve—No additives or binders to reduce drying capacity.

#### The Smallest, Most Powerful, Easiest-to-Install Drier Made

Here is a general purpose drier designed, tested and proved to eliminate the worst moisture conditions encountered in general field service work. It is small, but with plenty of capacity to handle units up to  $\frac{3}{4}$  hp, and the large capacity inlet filter will clean up the dirtiest system.

**CAPACITY:** The Little Giant Drier can be used on all hermetic and open-type units up to  $\frac{3}{4}$  hp with F-12 and  $\frac{1}{2}$  hp with F-22 refrigerants.

**CONSTRUCTION:** The KMP Little Giant Drier consists of a  $\frac{3}{4}$ " O.D. spun copper shell with  $\frac{1}{4}$ " copper end tubes silver brazed in place. The inlet is made to fit either  $\frac{1}{4}$ " O.D. or  $\frac{3}{16}$ " I.D. with outlet spun down to accommodate capillary. Driers are completely dehydrated and the ends fused and sealed to insure dryness. KMP's undercutting feature permits tubes to be quickly and easily snapped off, as well as cut off, swaged, flared or bent to take care of all field applications from capillary sweat connections to  $\frac{1}{4}$ " flare. Rated in accordance with ARI Standard No. 710.

SEE THE KMP LINE AT YOUR WHOLESALER



**KMP**

KENMORE MACHINE PRODUCTS, INC.

LYONS, NEW YORK

Dryers • Accumulators • Accumulator Dryers • Strainers • Capillary Assemblies

Circle No. 57 on Reader Service Card

#### Solenoid Valve

**Product:** 2-way solenoid valve (Series L).

**Manufacturer:** Skinner Electric Valve Div., Skinner Chuck Co., New Britain, Conn.

**Features:** High flow, small compact valves can be mounted directly to the line. Forged brass body, and brass and stainless steel internal parts eliminate internal rusting, clogging or contamination. Nylon diaphragm is designed so that only a small section is subjected to pressure. Will operate under pressures from 5 to 150 psi, in temperature range from -40 F to 180 F.

Circle No. 145 on Reader Service Card

#### Unit Coolers

**Product:** Unit coolers (Series MX).

**Manufacturer:** Tenney Engineering, Inc., Union, N. J.

**Features:** Lightweight aluminum, designed for back bars, reach-ins, direct-draw bars, under counters and low boys, as well as for walk-in coolers. Capacity range of 900 to 12,000 Btu. Factory-mounted keyhole slotted hangers on smaller units per-

No. 4 in a series on  
better compressor servicing



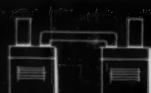
## Herman Hermetic Hints

# ON Compressor Adaptability

### RESIDENTIAL



Room Coolers



Central Systems



Heat Pumps

### COMMERCIAL



Walk-in Coolers



Display Cases



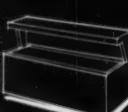
Water Coolers



Home Freezers



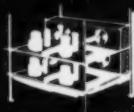
Refrigerators



Ice Cream Cabinets



Beverage Coolers



Remote Installations

### AUTOMOTIVE



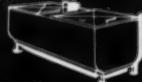
Auto, Truck, and Cab  
Air Conditioners



Truck Body Refrigeration



Vending Machines



Bulk Milk Coolers



Dehumidifiers

### SPECIAL



there is a **Tecumseh** for almost every compressor application

In serving the replacement needs of the industry, you should be aware of the great number of applications in which Tecumseh hermetics are currently used or where they could be used even more effectively than other original equipment. Particularly important to consider in specifying a replacement is the fact that Tecumseh has more compressor models, specifically suited to a wide variety of applications, than any other manufacturer.

Further, you will be sure that in installing a Tecumseh, you have the industry's most efficient compressor in operation. Tecumseh's low percentage of field failures is an established record. And figured against our more than 37 million compressors in the field, it adds up to more, satisfied owners . . . the kind that you want to build up your service reputation. See your authorized Tecumseh wholesaler on your next compressor replacement or specification job.



**The Leader Serving Leaders in the Air Conditioning and Refrigeration Industries**

**TECUMSEH PRODUCTS COMPANY**

MARION, OHIO

EXPORT DEPT: P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

CANADA: Tecumseh Products of Canada Limited, 1667 Dundas St., London, Ontario.

TECUMSEH, MICHIGAN

# Why

## REFRIGERATION SERVICE ENGINEERS SHOULD BUY WOLVERINE REFRIGERATION TUBE

**WOLVERINE REFRIGERATION TUBE** is packaged in the exclusive Wolverine Roll-O-Tube® carton that can be used as a timesaving reel, protects unused tube against damage and dirt, is color coded for easy identification, has a convenient center hole for easy carrying.

**WOLVERINE REFRIGERATION TUBE** has an exclusive, plastic end seal that gives positive protection against moisture and dirt, is easy to insert and remove, eliminates cutting off tube ends, makes sealed tube easy to insert through partitions, etc., because it has same O.D. as tube.

**WOLVERINE REFRIGERATION TUBE** is manufactured by a company that has based its growth on constant research, sound engineering, rigid quality control and sales integrity plus the firm belief that service to the people that use its products is Wolverine Tube's most important function.

**WOLVERINE REFRIGERATION TUBE** is **TUBEMANSHIP** made—is clean, dry, bright, consistent in temper, manufactured to rigid specifications to give maximum performance under all operating conditions.

**WOLVERINE REFRIGERATION TUBE** is available in a wide range of sizes in both rolls and straight lengths. Ask for it by name and remember to **Buy From Your Wholesaler**.



CALUMET & HECLA, INC.  
CALUMET DIVISION  
URANIUM DIVISION  
GOODMAN LUMBER DIVISION  
WOLVERINE TUBE DIVISION

In Canada:

CALUMET & HECLA OF CANADA LIMITED  
WOLVERINE TUBE DIVISION  
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**WOLVERINE TUBE**  
DIVISION OF  
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17228 Southfield Road  
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Circle No. 80 on Reader Service Card

mit easy installation on walls or ceilings without impairing access for servicing. Suction air flow standard on smaller units. Blow-through air flow, standard on six larger models, is available for entire line. Coils are non-ferrous, with minimum pressure drop and conservative ratings.

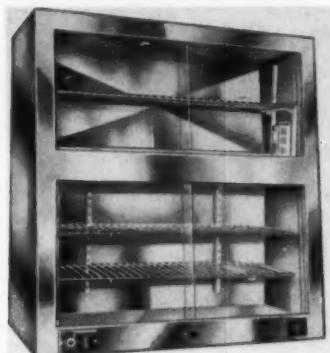
Circle No. 146 on Reader Service Card

#### Food Display Case

**Product:** Combination heated and refrigerated food display case.

**Manufacturer:** Lern, Inc., Chicago, Ill.

**Features:** Lower half of unit is completely self-contained refriger-



erated display case. Top section is independent heated display case. Both sections work independently. Total counter space for the case is only 36".

Circle No. 147 on Reader Service Card

#### Electric Water Cooler

**Product:** Pressure-type hot and cold water cooler. (Model A5 PR-HC).

**Manufacturer:** Ebco Mfg. Co., Columbus, Ohio.

**Features:** Refrigerated compartment and two ice cube trays ac-



cessible from front. Serves hot or cold water. Modern, high-styled cabinet finished in glacier gray.

Circle No. 148 on Reader Service Card

#### Flexible Conduit

**Product:** "Sealed Skin" Flexible metal conduit.

**Manufacturer:** International Metal Hose Co., Bellevue, Ohio.

**Features:** Galvanized steel core made from continuous strip metal is

covered with water-tight hide of polyvinyl chloride. This provides permanent protection against oil, grease, weather, water, dirt, chemicals, fumes, and salt spray. Can be in-



stalled easily in bends or crowded quarters, and can be cut on the job to size needed. Good resistance to vibration. Available in  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ ,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ ,  $2$ ,  $2\frac{1}{2}$ ,  $3$ , and  $4$ ".

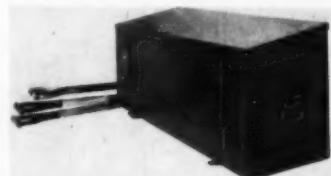
Circle No. 149 on Reader Service Card

#### Job-Site Tool Chest

**Product:** Tool chest designed for on-the-job use by contractors.

**Manufacturer:** Scott-Rice Co., Tulsa, Okla.

**Features:** Available in two sizes. Extended flanged top provides complete weather protection. Steel slot permits storage of six handle tools



which cannot be removed when top is locked. Removable trays and shovel slot with angle irons optional. Angle iron for stilt mounting to allow full truck bed capacity also available. Height does not restrict driver's rear mirror vision.

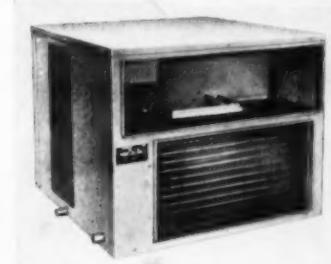
Circle No. 150 on Reader Service Card

#### Air-conditioners

**Product:** Self-contained, air-cooled air-conditioners.

**Manufacturer:** Ilg Electric Ventilating Co., Chicago, Ill.

**Features:** Five models of 2, 3, and 4 hp, cover capacity range from 19,700 to 40,000 Btu/hr. Can be



used as separate system or with existing warm air ducts for commercial or residential installations. No plumbing or water connections required. Large motor-driven blowers run at low speeds, and glass fiber insulation deadens operational noise. Can be installed inside or outdoors. 4-hp model is  $59\frac{1}{2}$ " x  $32$ " x  $24$ ".

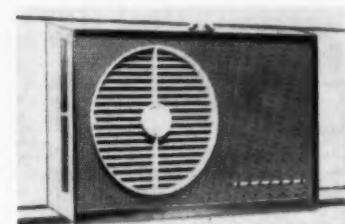
Circle No. 151 on Reader Service Card

#### Portable Air-Conditioner

**Product:** "Minute Mount" portable room air-conditioner.

**Manufacturer:** Fedders-Quigan Corp., Maspeth, N.Y.

**Features:** Telescoping side panels and sealing gasket simplify in-



stallation. Cabinet size is  $12\frac{1}{2}$  x  $12\frac{1}{2}$  x  $20$ ". Capacity, 4600 Btu's. Unit is held in place on steel plate bracketed to window sill. Designed to be sold as a unit that can be carried home to eliminate loss of orders due to delayed installation.

Circle No. 152 on Reader Service Card

#### Ice Dispenser

**Product:** "Cube 'n' Crush" ice dispenser for use with automatic ice cube makers.

**Manufacturer:** W. Mannhardt & Son, Chicago, Ill.

**Features:** Almost any ice cube machine may be mounted on top of the dispenser, which receives and stores the ice for delivery. Auto-



matically dispenses either cube or crushed ice, eliminating contamination, handling, and wet floors. Designed primarily for hospitals and institutions, adaptable for use in supermarkets, processing plants, res-

# TOP SECRET REVEALED!

The closely guarded secret of how hundreds of refrigerator and air conditioning service and repair men find the extra time to take on more jobs — take home a bigger pay envelope, has been revealed. It's Frankell's Hermetic Compressor Opener — a fully proven, precision engineered unit that requires only 2 minutes of a man's time to open any shape compressor (up to 20" in dia.) — regardless of the position of the weld. It's easy as A,B,C, — anyone can do it . . . no special fixtures or jigs required . . . and just one hermetic job a week pays for this time saving, money making wonder. Remember, when you repair a hermetic compressor — the profits are big.

\$695 NET  
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Ask about our low  
cost rental plan.

**FRANKELL MFG. CO., INC.,**  
1074 Home Street, New York 59, N. Y.  
WRITE DEPT. H. for complete information.  
Export facilities

## AIRSERCO PRODUCTS Solve your Production or Servicing puzzles

IN REFRIGERATION AND AIR CONDITIONING



Production or servicing dilemmas? Solutions to these perplexing puzzles fall right into place naturally — with Airserco Products.

**First** — Airserco has the most complete line of servicing equipment in the industry.

**Second** — Airserco can supply your requirements from a simple test cord to a complete production line facility.

**Third** — When you specify Airserco you are requesting "The Standard of the Industry" for refrigerant handling and measuring equipment, high vacuum pumps, and testing instruments.

Remember, the man who needs testing equipment is already paying for it. Just contact your nearest wholesaler or write us at Pittsburgh. Airserco has built more refrigeration testing equipment than any other company in the world.

**AIRSERCO MANUFACTURING CO., INC. PITTSBURGH 13, PENNSYLVANIA, U.S.A.**

If you do not have our complete Refrigeration Catalog, request one today.

which causes filter warning light to glow. Suitable for either single pressure connection (between filter and blower) or differential pressure connections (across filter) using  $\frac{1}{2}$ " I.D. hose. Easily adjusted in field to signal dirty air filter resistance. Circle No. 154 on Reader Service Card

### Humidifier

**Product:** "Return-Aire" humidifier for hot air heating systems.

**Manufacturer:** Herrmidifier Co., Neffsville, Pa.

**Features:** Can be mounted on exterior underside of return air duct of any hot air furnace. Operates on standard 110 volt house current and



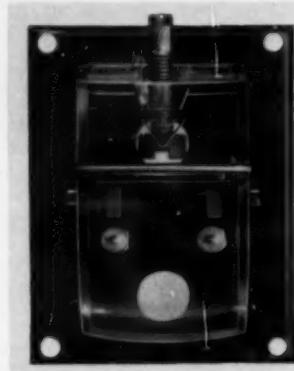
is connected to existing fan control of furnace. Water supply is controlled by float valve inside the unit. Daily capacity of more than 4 gal-

### Filter Service Switch

**Product:** Model MNE air filter service switch for operating warning light to indicate need for air filter replacement.

**Manufacturer:** Bacharach Industrial Instrument Co., Pittsburgh, Pa.

**Features:** Suitable for most cooling and/or heating systems. Ac-



curately senses when filter must be changed. Closes electrical circuit



ground. Available in both carrier squelch and dual squelch private line versions.

Circle No. 157 on Reader Service Card

#### Wall Display Case

**Product:** Self-contained wall type display case.

**Manufacturer:** Bally Case & Cooler Co., Bally, Pa.

**Features:** Suitable for storage of dairy products, foods and beverages in delicatessens, bakeries, tap rooms, restaurants, institutions, florists and food and drug stores. Built-in evaporator pan disposes of coil condensate



—eliminates plumbing. Four tiers of shelves are standard equipment, and

are adjustable every  $\frac{1}{2}$ " in height. Available in two models: 52" length has 33 sq.ft. of shelf area, 30 cu.ft. of storage capacity; 96" length has 67 sq.ft. shelf area, 59 cu.ft. of capacity. Both models 30" deep, 77 $\frac{1}{4}$ " high.

Circle No. 158 on Reader Service Card

#### Power Gate

**Product:** Hydraulic power gate (Model T-2A).

**Manufacturer:** Daybrook Hydraulic Div., Young Spring & Wire Corp., Bowling Green, Ohio.

**Features:** Ramped platform measures 90 x 34". Capacity up to



2,000 lbs. Designed to ease loading and unloading of bulky items such as furnaces, boilers, and air-conditioners.

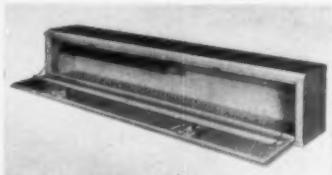
Circle No. 159 on Reader Service Card

#### Tool Boxes

**Product:** Tool boxes for pickup trucks.

**Manufacturer:** Morrison Steel Products, Inc., Service Body Div., Buffalo, N. Y.

**Features:** Available in lengths of 75, 90, and 105". Patented paddle locks, flush mounted for safety and



appearance, with slam-action safety catch, and can be serviced with a pair of pliers. Door provides flat work table when open. Includes full-length tool tray and materials tray with adjustable dividers. 105" length has two doors with a lock on each.

Circle No. 160 on Reader Service Card

#### Motor Compressors

**Product:** Line of motor compressors up to 15 hp.

**Manufacturer:** Brunner Co., subsidiary of Dunham-Bush, Inc., West Hartford, Conn.

**Features:** Units are suction gas cooled for greater durability and longer life to motor windings. Bolted construction permits easy take-down



**We Go to Great Lengths**

**to provide the right size**

**valve for the right size job.**

#### WATSCO LINE TAP VALVES

RANGE FROM  $\frac{3}{16}$ " to  $\frac{5}{8}$ " INCLUSIVE



U.S. Pat. No. 2,827,913



A lifetime tool designed expressly for WATSCO Line Tap, Can Tap and Line Port Valves.

PART NO. CV-1

PART NO. CV-2

EACH JOB A CUSTOM INSTALLATION. EACH VALVE THE SAME LOW PRICE.

Small and compact, WATSCO tapping valves are easily installed . . . Handy inexpensive ports for charging, discharging and testing open and hermetically sealed units . . . No top heavy assembly . . . Will not loosen or leak due to vibrations . . . Will not crimp tubing.

For O.D. Tube Part No. For O.D. Tube Part No.

$\frac{3}{16}$ "	LT-3	$\frac{3}{8}$ "	LT-6
$\frac{1}{4}$ "	LT-4	$\frac{1}{2}$ "	LT-8
$\frac{5}{16}$ "	LT-5	$\frac{5}{8}$ "	LT-10

WATSCO line tap valves offer maximum protection with exclusive "3 point sealing."



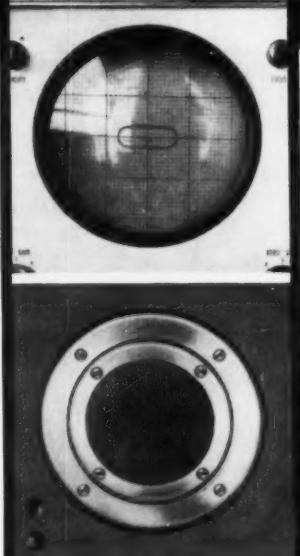
Circle No. 64 on Reader Service Card

*the meaning of custom-made quality  
in aluminum, brass, and copper tube*



One "peep" on the United electronic scope signals the slightest flaw or variance within specifications.

As a safeguard, any deviation is noted by an audible "beep". United Eddy Current testing automatically rejects inferior tube.



**At United . . . the "BEEP"  
and the "PEEP" of  
Electrical Eddy Currents  
lavish special care  
on your tube order**

Eddy Current electronic testing — with equipment developed by United engineers — detects those flaws in seamless tubes which are invisible. Another reason why for the highest quality in thin wall or standard aluminum, brass, and copper tubing, always specify United. For details, samples, and fast shipment, write, wire or phone:

**UNITED WIRE AND SUPPLY CORPORATION**  
1497 Elmwood Avenue, Providence 7, Rhode Island.



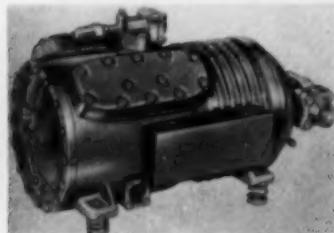
Specify

# UNITED

for aluminum, brass, copper tube and wire...brazing alloys

Circle No. 65 on Reader Service Card

for servicing, and speedy removal of valve plates for inspection. Compact

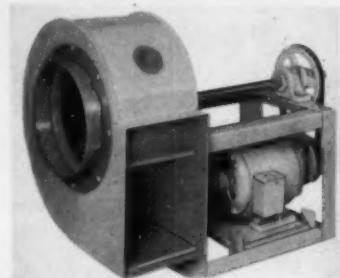


design and lightweight. Dynamic and static balancing assures quiet, steady, reliable performance. Available for

use with refrigerant 22 in to 2 to 15 hp models, with refrigerant 12 from  $1\frac{1}{2}$  to  $7\frac{1}{2}$  hp.

Circle No. 161 on Reader Service Card

cfm. Weather resistant finish — light acid resistant zinc chromate primer. Single or three-phase sleeve or ball bearing motors. Forward curve wheel blades provide quiet operation



at synchronous motor speeds, according to manufacturer. Sturdy housing is rotatable to eight different discharge positions.

Circle No. 162 on Reader Service Card

## OVER-VOLTAGE CAUSES HOT-RUNNING MOTORS

## LOW VOLTAGE RESULTS IN LOST MOTOR TORQUE

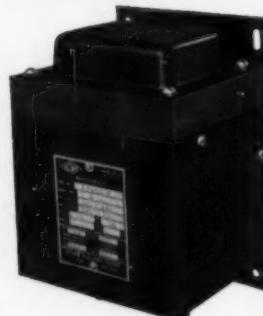
### Correct Off-Standard Line Voltage with Acme Electric Buck & Boost Transformers

Check the supply line voltage, and if it does not match the normal voltage of the motor — install a buck and boost transformer to correct the over-voltage or under-voltage condition.

Remember these basic points: When motors operate on a line voltage in excess of nominal rating, operating temperature increases often to the danger point. When motors operate under low voltage conditions, necessary torque, to adequately handle the load, is lost. Motors labor to carry the load, overheat and burn-out.

These common conditions can be corrected with Acme Electric Buck and Boost transformers which permit modification of voltage by 5%, 6 1/2%, 10%, 13 1/2%, 20% or 26 1/2%.

Definitely the most inexpensive way to correct an off-standard voltage condition. Write for catalog and prices.



**ACME ELECTRIC CORPORATION**  
829 WATER STREET • CUBA, NEW YORK

**Acme**  **Electric**  
TRANSFORMERS

Circle No. 66 on Reader Service Card

### Flexible Connectors

**Product:** Flexible metal wet heat connectors.

**Manufacturer:** Cobra Metal Hose, Chicago, Ill.

**Features:** 14 separate models in 30 combinations for hot water or steam heating systems. Available in  $1\frac{1}{2}$  and  $\frac{3}{4}$ " ID. Eliminates many fit-



tings, nipples and assembly operations. Flexible connectors absorb sound and automatically take up expansion and contraction of lines. Constructed of high quality bronze metal tubing. Can be used with temperatures up to 350 F.

Circle No. 163 on Reader Service Card

### Drilling Machine

**Product:** Lightweight concrete drilling machine.

**Manufacturer:** Molco Drilling Machines, Inc., Washington, D.C.

**Features:** Swivels 360° to allow drilling in any direction. Will drill



holes as large as 6" dia. through concrete or other hard building material at the rate of 1" per minute. Uses special thin-wall diamond core bits. Special kit to convert horizontal machines to 360° drilling is also available.

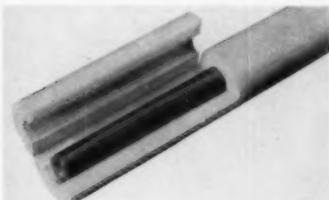
Circle No. 164 on Reader Service Card

#### Pipe Covering

**Product:** Low temperature pipe installation.

**Manufacturer:** Glo-Brite Products Co., Chicago, Ill.

**Features:** Pre-adhesive edges cuts application time. Made of Dow "Styrofoam", available in wide range



of diameters to fit most domestic and industrial applications. Provides insulation, vapor barrier, anti-sweat and anti-drip properties. Lightweight, requires no covering or bands. Has no odor and is rot-proof, mold-proof, water-proof.

Circle No. 165 on Reader Service Card

#### Fan Control

**Product:** Portable fan timer (Model PF31-0).

**Manufacturer:** Paragon Electric Co., Two Rivers, Wis.

**Features:** Automatically shuts off the fan for any pre-selected time



up to 24 hours. Powered by quiet, self-starting industrial type motor. Can be used with any fan to 1/4-hp, 12-volts, 60-cycle, a.c.

Circle No. 166 on Reader Service Card

#### Electric Heaters

**Product:** Recessed convection electric heaters.

**Manufacturer:** Circle-Air Industries, Inc., Brooklyn, N.Y.

**Features:** When installed, units protrude only two inches. Temperature is automatically controlled by built-in thermostat with pilot light.

Circle No. 69 on Reader Service Card

## Handy Tube Bender

**Smoothly Bends ANY  
Pipe or Tubing**



• Just a twist of the wrist assures perfect, even bends . . . right-angle, any angle, U and offset—every time. Eliminate need for els. No more guesses—no kinks! Save enough time, labor and money on ONE job to pay for your Handy Bender.



See your supply house—or write for free folder today.

**HOLSCLAWS BROS., INC.**

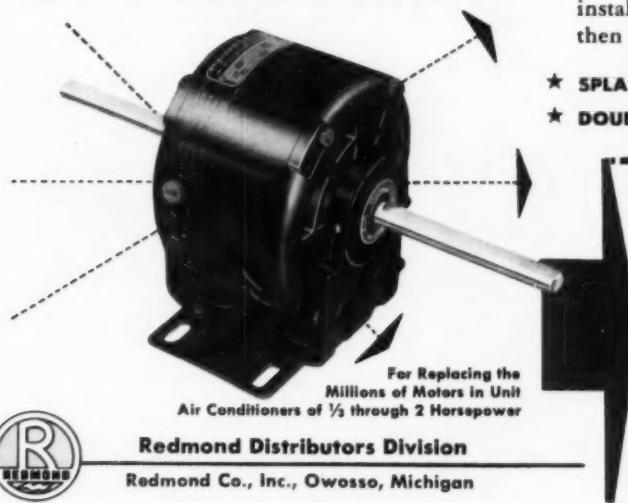
430 N. WILLOW ROAD—EVANSVILLE, IND.

## INCREASE YOUR SALES...

WITH

**NEW Redmond**

**AIR CONDITIONING  
REPLACEMENT MOTORS**



#### ★ 2-SPEED REPLACEMENT

One motor can be used for two-speed replacements, or you can simply connect the desired lead wire for the horsepower requirement in a single-speed unit.

#### ★ "QUICK DISCONNECTS" FOR EASIEST INSTALLATION

No need to have wires in your way when you are installing Redmond motors—put in the motor and then plug in the leads.

#### ★ SPLASH-PROOF CONSTRUCTION

#### ★ DOUBLE-SHAFT EXTENSION

#### REDMOND DISTRIBUTORS DIVISION

Redmond Co., Inc.  
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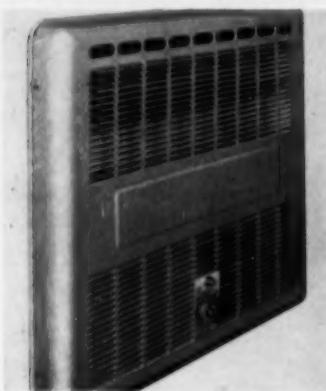
Send me your new AY catalog sheet.

Mail me your 4-page catalog describing the complete line of Redmond motors, blowers, fan blades, replacement kits, and accessories.



NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

Hanging slide simplifies installation. It is not necessary to remove unit to make repairs. Cabinets finished in



choice of chrome, white, hammertone grey, and Hawaiian tan. Available in models from 500 to 3000 watts, with an output of up to 10,246 Btu.

Circle No. 167 on Reader Service Card

#### Cable Attachment

**Product:** Cable return crank attachment for all of manufacturer's portable winch-hoists.

**Manufacturer:** Lug-All Co., Haverford, Pa.

**Features:** Helpful with "long reach" models that are equipped



with 20 or more feet of cable as it makes possible rapid return of cable to drum. Crank is detachable easily. Locking pin shears before unsafe situation develops should anyone attempt to use crank for handling loads contrary to manufacturer's recommendations.

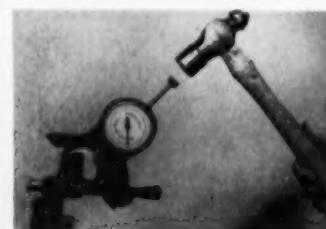
Circle No. 168 on Reader Service Card

#### Combination Tool

**Products:** Point indicator gauge, protractor, centering-head and level.

**Manufacturer:** Brite-Line Corp., Minneapolis, Minn.

**Features:** Combines three basic tools in one: centering-head, level,



and angle gauge. Combines 360° calibrated dial and sealed, mercury

balanced level enclosed in cast aluminum housing, plus centering head mounted on 90° cast iron V base. Lifetime magnets welded in base hold the indicator securely to any metal. Can be used to set angles, locate dead center on square or round stock, line up crossmembers, determine angles, find pitch, level blowers, install pipe, or mount controls. Measures 5 1/4" high, 5" wide, 1" deep. Weighs 15 oz. Complete with 23-oz. metal carrying case.

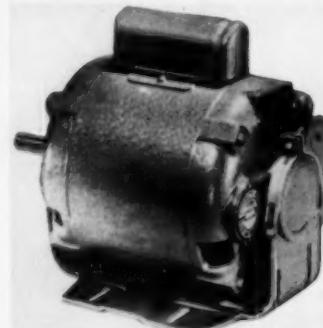
Circle No. 169 on Reader Service Card

#### Single-Phase Motor

**Product:** Line of single-phase motors for fan-drives from 1/3 to 3-hp range.

**Manufacturer:** A. O. Smith Corp., Tipp City, Ohio.

**Features:** Models in 115/230-volt size in 1/3 through 1 1/2-hp ratings. 230-volt models in 2 and 3-hp



ratings and in both 1800 and 3600 rpm speeds. Wound for either direction of rotation. Dynamically-balanced rotors. According to maker, molded neoprene rings on bearing hubs isolate motor and fan from motor mount, suppressing any fan vibration.

Circle No. 170 on Reader Service Card

#### Gas Boiler

**Product:** "Holiday" cast iron gas boiler (No. 70).

**Manufacturer:** Burnham Corp., Irvington, N.Y.

**Features:** Designed for large residences, apartment houses and



commercial installations. Available in eight sizes with capacities from 600 sq.ft. to 2700 sq.ft. for water; and 325 sq.ft. to 1580 sq.ft. for steam. Built-in tankless water heaters available for water and steam models. Color is two-tone blue and silver-gray baked enamel finish. Concealed automatic controls.

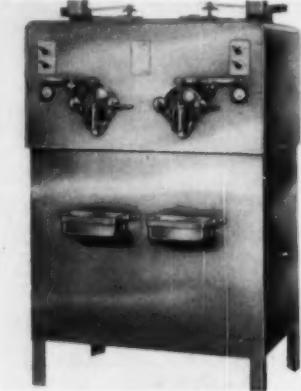
Circle No. 171 on Reader Service Card

#### Ice Cream Freezer

**Product:** Ice cream freezer (Model 975).

**Manufacturer:** Freez King Corp., Chicago, Ill.

**Features:** Includes two independent machines in one frame, each with its own 1 hp hermetic con-



densing unit, and 1 hp beater motor. Enables operator to dispense two flavors of soft ice cream at one time. Each head produces 12 gallons per hour. Measures 36" wide, 24" deep, 56" high. Stainless steel panels and a minimum of detachable parts simplifies cleaning and maintenance.

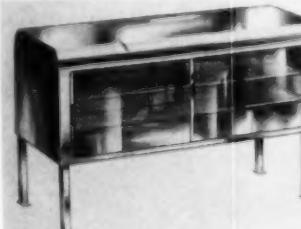
Circle No. 172 on Reader Service Card

#### Display Case

**Product:** Refrigerated display case for displaying and selling crisp salads and chilled desserts.

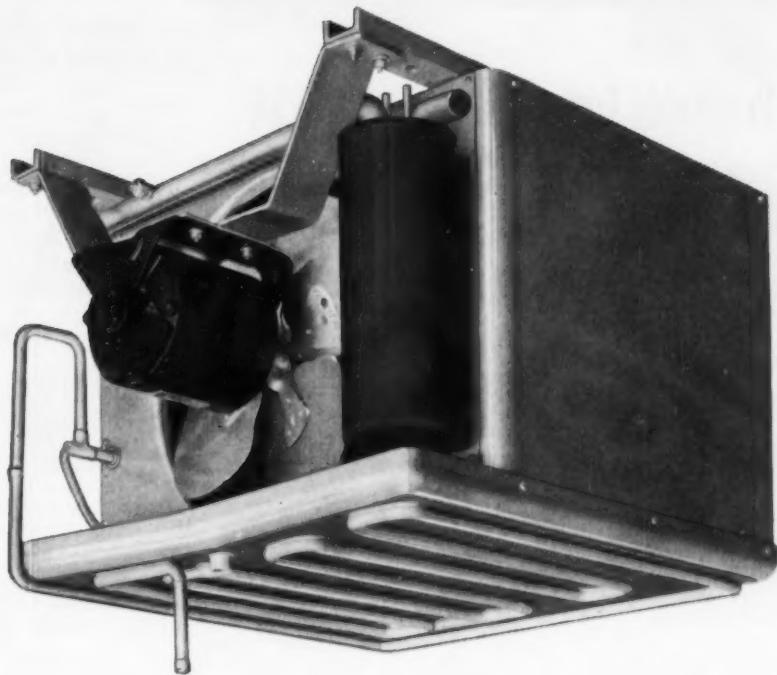
**Manufacturer:** Bastian-Blessing Co., Chicago, Ill.

**Features:** Self-closing glass doors on both sides. Blower cooling



coils and fluorescent light are concealed in top. 14" legs serve as ducts for electric wires; permit mounting case on some other unit; and impulse buying is prompted because contents are seen at eye height.

Circle No. 173 on Reader Service Card



**RECOLD'S VAPOMATIC  
IS NOW NUMBER ONE CHOICE  
FROM COAST TO COAST**

**THE EVIDENCE:**

- **Tops in units sold**
- **Tops in dollar volume**

**RECOLD** CORPORATION

7250 East Slauson Ave., Los Angeles 22, Calif.

Circle No. 70 on Reader Service Card

## "Selling Profitably Today" Theme of NCRSA Convention at Miami Beach Nov. 16-19

NATIONAL COMMERCIAL REFRIGERATOR SALES ASSOCIATION will hold its 12th annual convention Nov. 16-19 at Miami Beach, Fla. Theme of this year's program is "Selling Profitably Today."

The three day program includes informative talks on how distributors can sell accounts that buy direct; future of the distributor; organization; marginal sales; creating and selling new customers; making capital work for you; and keeping salesmen informed and inspired.

A series of round table discussions will cover such subjects as delivery, installation and servicing; engineering and store planning; hiring, training, compensating and directing salesmen; and diversification of lines.

An official of a prominent Miami food store chain will tell why his chain now buys from commercial refrigeration distributors, whereas formerly it purchased direct.

Headquarters for the convention will be Golden Gate Hotel.

An "early birds" cocktail party Sunday evening, Nov. 16 will provide a pre-convention get together. Afternoons have been left free so that delegates and their wives can enjoy Miami Beach by sightseeing, swimming, or fishing.

The annual dinner will have a tropical flavor this year as delegates enjoy an Hawaiian luau on the pool patio.

NCRSA president Harry Hattenbach, Hattenbach Co., Cleveland, Ohio, will be the keynote speaker and will discuss the future of the distributor, and the problems involved in selling profitably today.

Organize for growth is the subject of a talk to be given by NCRSA first vice president Milton

I. Schwartz of S. & M. Schwartz & Co., New York, N. Y.

Donald D. Denny, Modern Market Fixtures, Dayton, Ohio, will tell how to create and sell new customers on complete new stores.

Two distributors and two representatives of manufacturers will explore the marginal sale — when to accept and when to reject — in a panel discussion.

Distributors and manufacturers not affiliated with NCRSA are invited to attend and learn more about the work NCRSA is doing.

### 4 MORE DISTRIBUTORS GET NCRSA MEMBERSHIP

National Commercial Refrigerator Sales Association has announced the addition of four new distributors to its membership rolls.

The new members include: Beau lieu Refrigeration Co., Lafayette, La.; Commercial Refrigeration Co., Baton Rouge, La.; Hill Refrigeration

Corp., Richmond, Va.; Reliable Refrigeration, Ltd., Toronto, Ontario, Canada.

### NCRSA MEMBERS REPORT SALES DOWN IN 1958

National Commercial Refrigerator Sales Association has reported that members participating in the quarterly report showed an average sales decline for the first quarter of 1958 of less than 5% under 1957. Following are the average percentages for all NCRSA members reporting in the various categories:

	1958 First Quarter	Increase	Decrease
	%	%	
Total Dollar Sales	—	4.39	
Dollar Net Profit	—	11.58	
Before Taxes	—		
Inventory	(March 31)	2.04	
Accounts Receivable	(March 31)		3.92
	—		

### HAVERLY FILM AIMED AT FARM AUDIENCES

A sound slide-film containing information on bulk milk cooler efficiency is available for showing to farm audiences. Produced by Haverly Equipment Div., John Wood Co., the film provides dairymen with a value they can use when making a major investment in the future of their farms.

The film was made on a dairy farm, with the farmer adding com-

*Continued on page 94*

### KING SIZE GROCERY STORE



**LARGEST SUPERMARKET IN THE WORLD** is said to be Schwemann Bros., New Orleans, La. The 244,000-sq.ft. building has 35 check-out counters, and 1500 shopping carts. Dunham-Bush refrigeration equipment, installed by United Refrigeration, Inc., New Orleans, keeps produce fresh throughout the store. The refrigeration equipment serves two meat cooler rooms, one produce room, two fish storage rooms, one dairy room, one delicatessen storage, and one poultry room.



Pacemaker Unit Coolers.  
Ten models.



Radial Unit Coolers.  
Eight sizes.



Two Way Unit Coolers.  
Five sizes.

# McQUAY

Means Quality

FOR EVERY REFRIGERATION  
OR AIR CONDITIONING NEED



Hideaway Seasonmaker Air Conditioner. Four sizes,  $\frac{1}{2}$  to 5 ton nominal cooling capacity.



Floor Mounted Seasonmaker Air Conditioner. Four sizes,  $\frac{1}{2}$  to 2 ton nominal cooling capacity.



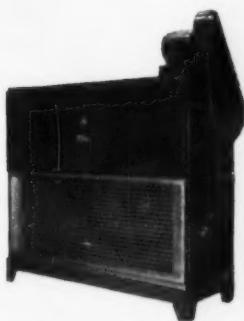
Space Miser Unit Cooler.  
Wide range of sizes in normal and low temperature units.



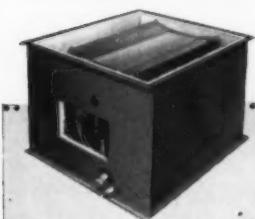
Ceiling Mounted ZEROPAK Product Cooler. Six compact models.



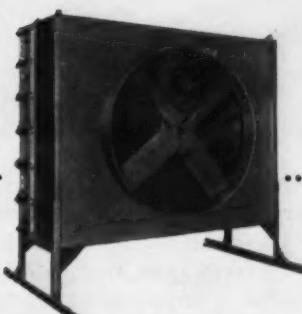
ZERO FROST Unit Coolers.  
Low temperature coolers in eight sizes.



Floor Mounted Product Coolers.  
Nine sizes, 4, 6 or 8 row coils.



Vertical Residential Evaporator.  
Five models in 2, 3, 4, 5 and 7 1/2 ton nominal capacities.



Aircon Air Cooled Condensers. Available up to 50 tons in a single unit.

McQuay  
Means Quality



Circle No. 71 on Reader Service Card



Contact your nearest McQuay wholesaler, or write direct to  
McQUAY, INC.  
1643 Broadway Street N.E.  
Minneapolis 13, Minnesota

ments and asking questions as the salesman explained the cooler. The film is titled "Yardstick of Performance," and is made available through local Haverly dealers.

#### MOVES TO NEW QUARTERS

Duplex Mfg. Corp., subsidiary of Pendleton Tool Industries has started operations in a 18,000-sq. ft. plant in Fort Smith, Ark. New machinery and equipment is being installed which will enable Duplex

to increase production and improve designs of its tool boxes.

#### BALLY OFFERS NEW PLANNING SERVICE

To assist food serving establishments in planning refrigerated storage, Bally Case and Cooler Co. has set up a commercial kitchen engineering department.

The service is free of charge and can be obtained by food operators by sending important details con-

cerning their requirements either directly to the company or to one of its distributors.

The company will analyze the information, and layout a complete floor plan which includes drawings showing location of components and shelves. The service also includes listing vital specifications and estimated installed price.

#### TYLER BUYS, EXPANDS PLANT IN GERMANY

Tyler Refrigeration International, C.A. has purchased outright the interests of AMCO Apparate and Maschinenbau of Wuppertal, Germany, and starts this month on construction of additional manufacturing facilities with a modern, new 40,000 sq.ft., expandable-type factory in Schwelm, Germany.

Tyler previously owned half-interest in the AMCO operation.

The German operation, to be known as Tyler Refrigeration International, Gmbh, will be a subsidiary of Tyler Refrigeration International, C.A., Caracas, Venezuela.

#### GRAYSON CONSOLIDATES WITH STRAUS-DUPARQUET

Grayson Equipment Co. has acquired control of Straus-Duparquet, Inc., manufacturer of commercial refrigeration and institutional food service equipment. Facilities of the two companies are being consolidated and will operate under the name of Straus-Duparquet, Inc.

The consolidated organization also includes: Albert Pick Co., Chicago, Ill.; Lyons-Alpha Products Co., Inc., New York; and S. & M. Schwartz & Co., Div. of Straus-Duparquet, New York.

#### ULTRA-VIOLET LAMP ADDED TO AIR FILTER

Coolerator Div., McGraw-Edison Co. has added an odor and bacteria-killing ultra-violet lamp to the firm's portable electrostatic air filter. The addition of the ultra-violet lamp will not change the price on the air filter.

The new feature is being incorporated in the present factory inventory of filters.



Don't risk your reputation on motor capacitors of questionable quality. Remember — only the *right* capacitor will assure maximum torque.

For over 25 years C-D motor starting and running capacitors have been "preferred" by motor manufacturers and repairmen

alike. And, there's a C-D type for every known motor application . . . available for immediate delivery from your local C-D Distributor. You can select the type you need for any job from Catalog XTR-MOT. Write for your free copy to Cornell-Dubilier Elec. Corp., South Plainfield, N.J.



## CORNELL-DUBILIER CAPACITORS

*Old Hands at Dependability*

Circle No. 50 on Reader Service Card

## SMALL UNITS, BIG JOB

Continued from page 57

through the roof into the space above the false ceiling. Workers are assured ample fresh air from a damper arrangement that allows a 15-25% fresh air intake through each unit.

Zone cooling was achieved by connecting a maximum of 10 units to a single thermostat. Each unit had separate electrical wiring. Zoning the units permits areas to be shut down when not being used.

The outside roof was treated with aluminum paint to give additional heat-reflecting qualities to the surface.

The newer section of the plant with its flat roof presented another type of cooling problem. Cold air was fed into the building by putting 44, 3½-ton units around the roof perimeter. All of them were fed into a duct which circles the inside of the building. Cold air outlets were cut into the duct at intervals to allow even, draft-free air distribution.

Actual cost for Lenkurt was \$1.55 per square foot. Estimates for a single central system were about \$2.50 per square foot.

Plant engineer Don W. Grider feels that these small, self-contained units have many applications for air-conditioning.

### DUCT MATERIALS OK'D BY FIRE ASSOCIATION

New duct materials, other than metal, have been accepted by the National Fire Protection Association. This acceptance includes flexible ducts and vibration isolation connectors.

Changes in a new standard on non-residential air-conditioning and ventilating systems by NFPA also make provisions applicable to the installation of ducts for high velocity systems.

Copies of this standard (NFPA 90A, 24 pages) may be obtained for 50¢ from the association, 60 Batterymarch St., Boston 10, Mass.

BUY FROM YOUR  
REFRIGERATION WHOLESALER

## ELECTRONIC BRAIN SOLVES INSULATION PROBLEMS



**INFORMATION ON HEAT TRANSMISSION TABLES** is checked by Johns-Manville Corp. engineer. Information is obtained from high-speed electronic computer now being used by the company. The computer also gives recommended insulation thicknesses based on economic considerations.

### MYERS HOST 1800 AT 13-STATE FIELD CLINIC

A series of 31 field training meetings on pumps and water systems, conducted by the sales training department of F. E. Myers & Bro. Co., Ashland, Ohio, has been attended by over 1800 distributors and dealers.

The meetings were conducted in 13 states and three provinces in Canada. A sales training team, headed by L. R. Lorenz, sales training manager, traveled over 20,000 miles to conduct the meetings.

States covered were, Montana, Pennsylvania, Texas, West Virginia, Indiana, Minnesota, Ohio, North Carolina, Kentucky, New York, Wisconsin, Kansas, and Virginia.

### NEW COMPANY TO MAKE ELECTRIC HEATING UNITS

Ramco Mfg. and Engineering Co. has started production of electrical heating units in a new plant in Portland, Ore. The new company plans to manufacture a complete line of residential and commercial electrical heating equipment, including baseboard, wall and bathroom type units. The 14,000-sq.ft. plant is located at 5413 N.E. Columbia Blvd., Portland.

### AM-STAN OFFERS AIDS TO SALES OUTLETS

A new and enlarged catalog and newspaper ad mat service has been offered its dealers and distributors by American-Standard Air-conditioning Div.

The catalog describes over 70 different items of literature, special catalogs, direct mail, and dealer identification material.

The ad kit contains proof sheets of a variety of newspaper mats for winter, summer, and year-round air-conditioning equipment. These mats offer contractors a wide selection in preparing their locally-designed ads.

### WINS DIAMOND KEY

The 18th annual Wolverine Tube diamond key award was presented this year to Jack B. Chaddock, associate professor of mechanical engineering, Rensselaer Polytechnic Institute, Troy, N.Y. Chaddock's prize-winning paper entitled "Film Condensation of Vapor in a Horizontal Tube" was selected as an outstanding technical paper in the refrigeration field.

The announcement was made by John Dumser, director of sales for Wolverine Tube, at the annual meeting of American Society of Refrigeration Engineers.

## HOW DRY IS DRY?

Continued from page 63

an intermediate range of color between the wet color and the dry color. Normally the color change takes place not at one definite point but through a range as indicated in the table. This range is not large, however, and when it coincides with the maximum moisture content permissible to prevent corrosion it presents no problem.

The main value of a moisture indicator is that it tells the serviceman when to change driers. If the moisture indicator color is in the wet or caution range, the drier should be changed so as to reduce the moisture content to a safe level. In actual practice, the intermediate color seldom will be seen, because the system is either wet or dry.

### Improves Field Service

On many systems, changing the drier just once will remove enough moisture to change the system from very wet to very dry.

By using a moisture indicator the serviceman will quickly learn just what installation and dehydration methods give the best results in the field. Different methods can be tried and their effects evaluated by the color obtained on the moisture indicator. If the serviceman consistently obtains the dry color, then this is ample evidence that his technique is good.

### Serves Double Purpose

The moisture indicator usually is mounted in a sight glass. Thus this device has two uses: indicating moisture content, and indicating liquid refrigerant supply. Bubbles in the sight glass would indicate a shortage of refrigerant or a restriction in the liquid line.

With this latter function in mind the device should be installed just ahead of the expansion device and downstream from the drier and other accessories.

The moisture indicator, applied and used as described in this article, can be an important service tool. But don't make the mistake of thinking that it will automatically solve all of your field

service problems. Instead, use it as a doctor uses a stethoscope. It will aid you in diagnosing the trouble in any refrigeration system and will tell you when corrective action is required.

*This article is a condensation of a study prepared by W. F. Wischmeyer and J. E. Hoffman, chief engineer and product engineer, respectively, of Sporlan Valve Co. Their observations are based upon a combination of laboratory and field experience.*

## MOVIE MAKES IT EASY



**CORRECT WAY** of handling tube cutting, flaring, and bending operations is demonstrated in 20-minute color movie produced by Imperial Brass Mfg. Co. The film is being presented at sales meetings with Imperial distributors. It also is being used at clinics being held by distributors with industrial plants and trade schools. The movie also highlights installation methods that save time and prevent trouble on tubing jobs.

### COPELAND APPOINTS KENTUCKY WHOLESALER

Brock-McVey Refrigeration Supply Co., Lexington, Ky., has been appointed authorized wholesaler for the Kentucky area by Copeland Refrigeration Corp.

Brock-McVey will stock compressors, condensing units, and replacement parts. The company will represent Copeland in the area that it serves embracing eastern Kentucky and the northeast section of Tennessee.

### SALES KIT OFFERED

Over 50 sales aids, many of them free, are listed in a new "Profit File" being mailed to distributors F. E. Meyers & Bro. Co.

Items in the "Profit File" are available to all Myers distributors and dealers.

## CHICAGO PUTS OK ON ROOM UNIT JOBS

The city of Chicago Inspection Department will continue to permit installation of room units rated up to 2 hp or 16,000 Btu/hr capacity in accordance with Air-Conditioning and Refrigeration Institute Standard ratings and constructed to ARI standards.

Notification of this ruling was given the Refrigeration Industry Safety Advisory Committee. The action is an extension of an earlier exemption of room units of these sizes from city regulations affecting larger units, and is effective throughout the year 1959. The ruling resulted from presentations by RISAC to the city government.

The ruling applies only to critically charged window model units in the above size range and employing capillary tubes for metering the refrigerant to the evaporator. Units covered by the exemption will not contain pressure vessels such as liquid receivers or shell condensers.

## ARI TO TEST, RATE TRUCK TRAILER UNITS

An ARI Standard for testing and rating truck and truck-trailer refrigerating equipment is expected to be completed soon, according to George S. Jones Jr., managing director of Air-Conditioning and Refrigeration Institute.

Drafting of the standard is being accomplished by the engineering committee of the Mobile Section, S. J. Stowell, general sales manager of Kold-Hold Div. of Tranter Mfg., Inc., chairman.

The Mobile Section is the newest in ARI's list of 15 product sections.

### GETS NEW PLANT

A new 100,000-sq.ft. copper refinery has been put into operation by Reading Metals Refining Corp., a subsidiary of Reading Tube Corp. The new plant is located on a 16-acre site in Ontelaune Township, Pa. An additional 79 acres are available for future expansion. The new refinery makes possible Reading's participation in all steps in copper fabrication.

## These Editors Travel So Readers Stay Put



If you picture an editor as a character with a green eyeshade and garters on his sleeves, take a look at these fellows. They are the chief editors of IPC's eight magazine groups.

In 1957, these editors made 93 trips . . . visited 762 plants, attended 146 meetings and conventions. They found time to be active in 22 societies and held 14 offices in them. All this in addition to managing their editorial staffs.

By way of qualifications for their jobs, they attended 22 colleges, hold 14 degrees, have 101 years of publishing experience backed up by 63 years spent with 26 firms in other industries.

These figures add up to just one thing: IPC editors are knee-deep in their specialized fields. They have the vitality to go where the story is, the know-how to find it, evaluate it and tell it clearly to specialized audiences.

The result: readership that makes all 10 IPC magazines potent selling forces.

### EDITORS

### PUBLICATIONS

1 Charles P. Berka	Industry & Welding, Welding Illustrated, The Welding Directory
2 Philip R. Kollischer	Precision Metal Molding
3 Henry Lefer	Aeronautical Procurement
4 Jim McCallum	Refrigeration & Air- Conditioning Business
5 Paul Reznick	Applied Hydraulics, The Fluid Power Directory
6 Charles A. Hill	Modern Office Procedures
7 J. Arlen Marsh	Occupational Hazards
8 John D. Velardo	Flow, Flow's Material Handling Illustrated, The Flow Directory

**IPC** The INDUSTRIAL PUBLISHING Corporation

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Franchise Circulation gets magazines to the men who buy • Distilled Writing gets magazines read

# DETECT TROUBLE FAST!

IN ANY AIR CONDITIONING  
AND REFRIGERATION  
LIQUID LINE



It's easy to detect trouble quickly in refrigeration lines with this indicator. Letter "K" is etched on pyrex heat-resisting tube which shows through sturdy brass body at sight port. When "K" is not magnified, it indicates a shortage of refrigerant or a clogged line. Available in male and female flare sizes. Maximum operating pressure - 500 p.s.i. and maximum temperature 200° F. Easy to install.

See your Kerotest wholesaler!  
Ask for Model No. R81C.



KEROTEST MANUFACTURING CO.  
2504 Liberty Avenue  
Pittsburgh 22, Pa.

Circle No. 79 on Reader Service Card

## Dealer-Distributor APPOINTMENTS

*P. H. Hutchinson and Associates*, recently established in Pensacola, Fla., by P. H. Hutchinson, has been appointed sales representative by **Recold Corp.** Territory covered will include northwest Florida, and southern Alabama.

**Drayer-Hanson, Div. of National-U.S. Radiator Corp.** has announced the appointment of two new sales representatives. *Pacific Monitor*, Seattle, Wash. will handle the company's line of refrigeration and air-conditioning equipment in the pacific northwest area. *Rocky Mountain Aircold Co.*, Denver, Colo. will handle the company's full line of air-conditioning and refrigeration equipment including industrial, commercial and residential.

**Davies Nitrate Co., Inc.**, New York City, has been appointed agent for the metropolitan area by **Nitrogen Division, Allied Chemical & Dye Corp.** to handle sales for Barrett Brand Anhydrous Ammonia in cylinders.

Designation of **Power Engineering Corp.**, Vestal, N.Y., as distributor for **Carrier Corp.** in eight counties of the Southern Tier of New York has been announced.

The franchise includes the complete Carrier line of commercial, industrial, and residential packaged air-conditioning in addition to the larger applied systems which Power has distributed in this territory for several years.

**Port Morris Machine & Tool Works, Inc.**, has appointed *Louis Feiler Co.*, Detroit, as the distributors for Electro Freeze soft ice cream and shake machines in the Detroit and surrounding area. Louis Feiler Co., is owned and operated by Jess R. Feiler and Paul R. Feiler.

**Now**  
IS THE TIME  
when you  
need this



## PREST-O-LITE TRADE-MARK Refrigeration & Air-Conditioning Outfit

When your customers want service, you'll need this complete leak detecting, soldering, heating, and brazing outfit—in a handy steel case. It gives you

### ... JOB-MATCHED OPEN FLAMES

Fine, light, and medium torch stems—instantly interchangeable—for refrigeration and air-conditioning jobs.

### ... SENSITIVE LEAK DETECTOR

Shows up as little as 100 parts per million of refrigerant gas in air—locates leaks too tiny to find with soapy water.

### ... PRECISION CONTROL

Acetylene regulator automatically maintains selected delivery pressure—calibrated screw for flame adjustment.

### ... EASY TO USE

Detector is simple and positive—soldering and heating torch concentrates flame where needed—everything in one compact case!

Outfit includes torch handle, leak detector stem, 3 torch stems, regulator, 12½ ft. hose assembly, suction hose, and enameled steel carrying case. Complete (for B or MC tank), \$41.00.

Available now from your local supplier of time-proved **LINDE** products. Or write for information to **LINDE COMPANY**, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y.



"Linde," "Prest-O-Lite," and "Union Carbide" are trade-marks of Union Carbide Corporation.

Circle No. 78 on Reader Service Card  
REFRIGERATION & AIR-CONDITIONING

## COMPRESSOR SHIPMENTS DOWN FIRST QUARTER

Manufacturers' shipments of compressor bodies in the first quarter of 1958 were about 26% below shipments for the same period of 1957, according to George S. Jones, Jr., managing director of Air-Conditioning & Refrigeration Institute.

Figures are based on reports to ARI by companies whose output is estimated to represent more than 95% of the total U.S. production. Household refrigerator compressor shipments are not included.

★ ★ ★

### Manufacturers' Shipments of Compressor Bodies

(Except for household refrigerators)  
Shipments Including  
Exports

Horserpower	Mar.	Jan.-Mar.
1/5 HP & Under	105,414	267,544
1/4 HP		
1/3 HP	16,182	46,969
1/2 HP	14,050	39,528
3/4 HP	7,092	16,515
1 HP	88,582	248,280
1 1/2 HP	29,322	99,856
2 HP	42,261	110,768
3 HP	9,350	25,227
5 HP	7,056	16,327
7 1/2 HP	3,217	8,493
10 HP	841	2,498
15 HP	501	1,098
20 HP	133	444
25 HP	167	430
30 HP	130	402
40 HP	122	383
50 HP	109	303
60 HP	81	239
75 HP	58	188
100 HP & OVER	34	109
<b>TOTAL</b>	<b>324,702</b>	<b>885,601</b>
For Automotive Air-Conditioning		
— Total	46,354	129,266
For Ammonia Refrigerant —		
— Total	201	468
<b>GRAND TOTAL</b>	<b>371,257</b>	<b>1,015,335</b>

### AIRTEMP CONFERENCE SET FOR DECEMBER 4-5

Approximately 350 persons will attend Airtemp's national business conference at the Dayton Biltmore Hotel, Dayton, Ohio, December 4-5. The meetings will include the company's 1959 sales and merchandising plans and programs, and a scheduled plant tour of Airtemp's facilities. Several entertainment items will augment the two days' business sessions.

BUY FROM YOUR  
REFRIGERATION WHOLESALER

## A 125 H.P. Brook A.C. Motor Is **NOT** **Almost 125 H.P.**



Brook Type "B",  
125 H.P. Motor

When you purchase a Brook Motor of a given horsepower, that is just what you get. You need not buy 150 H.P. to make sure you get the 125 you require. Every Brook Motor has ample "copper" to deliver the particular horsepower involved — every Brook Motor is hydrostatically brake tested. You just cannot buy a better motor — yet, Brook Motors cost you up to 20% less than ordinary electric motors. Get the facts — send for literature. Standard frame & new NEMA Rerate frames. 1 to 600 H. P. Warehouses and Service Centers in major cities.

SINCE 1904

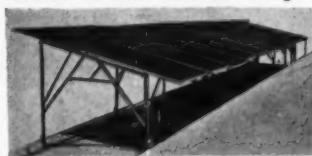
world's most respected motor  
**BROOK MOTOR CORPORATION**  
3553 W. PETERSON AVE., CHICAGO 45, ILLINOIS



## Edwards Airvec Supplies 90 Tons Of Air Conditioning To New Bowling Center\*

**EDWARDS** Airvec Condenser Utilizes Convection Principle.  
Eliminates Noise, Motors, Maintenance, Structural Problems.

Heat rising from the horizontal condenser creates a chimney-like draft that continues to draw fresh air through the unit. Manufactured in 2, 3, 5, and



7 1/2 ton basic sections, which then can be assembled in multi-sections for unlimited capacities up to hundreds of tons.

This principle eliminates: Noise, Motors, Wiring, Maintenance, Operating Problems. WRITE Airvec Dept.

Edwards Engineering Corp. Manufacturers Agents Inquiries Invited.

### CO - AXIAL FREON CONDENSERS



- COST REDUCED 30% to 40%
- CONDENSER WATER REDUCED 35%
- Refrigerant Charge Reduced
- Stabilizes Capillary Performance
- Smaller Cooling Towers Required
- Shipping Weight Reduced
- Many Shapes and Sizes Available
- Sea Water Models Available

**EDWARDS ENGINEERING CORP.**  
103 ALEXANDER AVENUE • POMPTON PLAINS, NEW JERSEY

## SILVER SHIELD PROGRAM LAUNCHED IN KALAMAZOO

Upgrade the quality of residential heating and air conditioning installations and you'll be able to get a better price and a fairer profit out of your jobs. That's the prime point of the Silver Shield program now under way in Kalamazoo, Mich.

This program was launched recently by the Kalamazoo Indoor Comfort Bureau, a group of local heating and air-conditioning contractors who have bound themselves together in a common effort to raise the standards of the business in their own community. This group is the first in the nation to put into actual practice the Silver Shield promotion developed by the National Warm Air Heating and Air Conditioning Association.

The program was formally announced at a kickoff dinner attended by local contractors, builders, bankers, and civic officials. Also on hand were a number of industry executives interested in seeing how the mechanics of such a program would be worked out.

The 12 contractor members of the Bureau are: Andrus Heating; C. Bartholomew; DeHaan Heat-

present time, all other contractors in the area are being urged to join, thereby participating in the benefits as well as sharing the costs.

To qualify as a Silver Shield system, the equipment must be installed in accordance with NWAHACA manuals. Plans for every such system must be submitted to the Bureau for approval before the installation is made. The completed installation must be inspected by Bureau members to make sure it conforms to the approved plans in all respects. Upon final approval of the installation, a Silver Shield decal will be applied.

The Silver Shield is intended as the customer's assurance of a properly designed and installed system. In granting this approval the Bureau even guarantees that any shortcomings that may later become apparent will be corrected. In effect, each member of the Bureau is guaranteeing that his competitors will do a good job.

To cover the cost of approving plans, inspecting installations, and warranting performance, a flat charge will be made for each Silver Shield decal issued by the Bureau. This charge is expected to be about \$10.

Any contractor, whether a member of the Bureau or not, can be authorized to install Silver Shield systems, providing his systems meet the necessary requirements. Non-member contractors will be required to pay the same price for each Silver Shield decal that Bureau members pay.

Twin aims of the Silver Shield program are described as "pride and protection for the consumer; prestige and profit for the industry".

A goal of 475 Silver Shield jobs has been set for the first year of the plan's operation. This includes winter, summer, and year-round air-conditioning systems.

It is estimated that the cost of each Silver Shield system to the consumer may be as much as from \$200 to \$600 more than for an average installation, but the object of the program is to make every Silver Shield job worth the difference.

In addition to beaming its promotion directly to the consumer,

the Bureau will work with architects and builders to get them to specify Silver Shield systems.

Bureau members are convinced that cooperation can win the battle. Eventually they hope to educate every homeowner in the area to know what to expect when buying a heating or air-conditioning system and to demand a job of Silver Shield quality.

The 12 members of the Bureau already have invested heavily in its



**PUBLIC ATTENTION** was focused on the Silver Shield program by having Miss Dee Reavis ride the city's streets in this appropriately "silver" costume on the day of the kickoff meeting.

operation. To promote the Silver Shield program the Bureau plans to spend upwards of \$10,000 in advertising during the next 12 months.

First blast in this educational campaign was a full page ad in the Kalamazoo Gazette outlining in detail just what the Silver Shield program is, why a Silver Shield system is different, and what this can mean to the user in terms of personal comfort. While the bulk of Silver Shield advertising will continue to be carried in the local daily newspaper, some TV and radio time also is being considered.

One of the problems anticipated by the Bureau is the fact that many contractors who might be interested in participating in the Silver Shield program may not be fully aware of the required standards or have the technical knowledge needed to install systems that would conform to these standards. To solve this problem, the Bureau plans to conduct a school, for members and non-members alike.



**FIRST SILVER SHIELD** operating license is presented to Lewis Andrus (left), president of Kalamazoo Indoor Comfort Bureau, by George Boedden, managing director of National Warm Air Heating and Air Conditioning Association.

ing; Nelson Fox Heating; Guernsey & Jones Warm Air Heating Co.; Kalamazoo Mechanical Service Co.; Wm. V. Metzger & Son; Glen W. Rynbrand Co.; S & N Heating Co.; Schippers Service Appliance; Donald R. Snyder; and L. E. Tassell Co.

Although these 12 constitute the membership of the Bureau at the

## Dealer-Distributor APPOINTMENTS

**Frick Co.** has announced the appointment of *Powers Refrigeration* as a distributor of Frick refrigerating equipment in southern California, the State of Arizona, and Clark County, Nevada.

•

**Dunham-Bush, Inc.** has appointed Nelson Co., Detroit, Mich., wholesalers of plumbing and heating products, to handle the distribution and sales of heating and air-conditioning equipment and specialties in the 60-mile area the Detroit firm covers.

Nelson has branches in northwest Detroit, Royal Oak, Ann Arbor and Grosse Pointe.

•

Five refrigeration sales representatives have been appointed for **McQuay, Inc.** They are: *Weeks &*

*Co.*, Boston, Mass., to handle all of New England; *John Sales Associates*, Millburn, N. J., to cover New York State and northern New Jersey; *Thomas Shotton Jr.*, Washington, D. C., eastern Pennsylvania, southern New Jersey, Washington, D. C., Maryland, Delaware, and Virginia; *Joe E. Parker*, Atlanta, Ga., North and South Carolina, eastern Tennessee, Georgia, Alabama, and Florida; and *H. A. Pietsch*, Pittsburgh, Penn., northern West Virginia and the Pittsburgh area.

The appointment of *Harold O. Knape & Co.*, Houston, Tex., as sales representative for heating and air conditioning also has been announced.

•

**Baltimore Aircoil Co., Inc.**, has appointed the following exclusive representatives:—*Donovan Associates*, West Hartford, covering Connecticut, western Massachusetts, and Vermont; *Engineered Equipment Co.*, Kansas City, Mo., covering western Missouri and Kansas; and *R. M. Toucey*, Pittsburgh, western Pennsylvania.

Circle No. 86 on Reader Service Card

**REMOVE  
SCALE**



**SAFELY-SWIFTLY**  
with  
**ANCO**

### Condenser Cleaner

Simply dissolve ANCO Condenser Cleaner in the sump while the system is in operation. Within 2 to 15 hours, condenser tubes are cleaned, head pressure drops to normal, and operating efficiency is restored.

ANCO Condenser Cleaner will not damage metals and is not hazardous to handle. Try it once and you'll use it always.

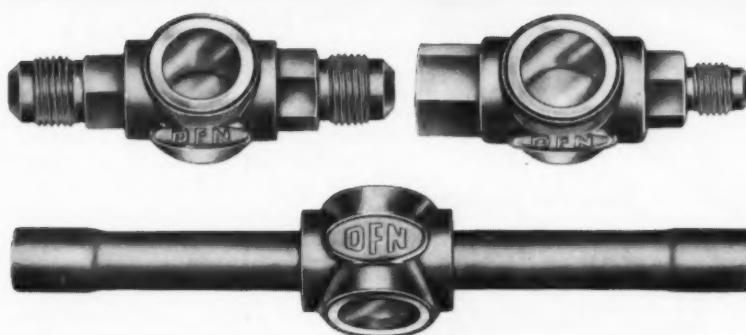
Keep your condenser tubes clean . . . chemically clean . . . with ANCO products.

For all ANCO products, see your  
wholesaler or write direct  
SPECIALISTS IN MAKING WATER BEHAVE



## NEW, IMPROVED LIQUID INDICATORS

now available with Single and Double Ports



**Large viewing windows • Crystal clear for undistorted view  
Rugged forged brass bodies • Non-directional • Unrestricted flow**

The new DFN Liquid Indicators are hermetically sealed as a one-piece unit—have no gaskets or springs—can be brazed into the line without assembly or disassembly—save installation time—and assure a completely hermetic system. Wide range of standard and special connection sizes available. Write for Bulletin G-15B.

- NEW high-temperature fusing method assures permanently leakproof service.
- Many thousands in field service have proven new construction positively leakproof.
- Both models approved for safety by U.L. approval for 500 psi. working service.



**THE MCINTIRE COMPANY**  
Livingston, New Jersey

Makers of Driers—Filters—Strainers  
Since 1925

Circle No. 85 on Reader Service Card

# FLEXON VIBRA-SORBERS®

## resist vibration fatigue

Flexon Vibra-Sorbers are corrugated flexible metal connectors for absorbing vibration and noise in compressor systems.

They are manufactured of high quality special bronze alloy excellently suited for freon and methyl chloride. The Vibra-Sorbers' precision construction, uniform wall thickness and balanced corrugations provide maximum resistance to fatigue under constant flexing and vibration.

For effective, economical vibration control, use Flexon Vibra-Sorbers—U.L. listed in sizes  $\frac{1}{8}$  through  $1\frac{1}{2}$ " I.D. Larger sizes to 8" available. Ask for Bulletin 139.

NOW  
AVAILABLE  
FROM  
FLEXONICS

Flex-O-Tube synthetic Freon-resistant hose for refrigeration and air conditioning service. Also, flexible metal connectors for circulating pumps. Write for information.

V-27



**Flexonics** Corporation

1321 S. Third Avenue  
Maywood, Illinois

Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.

In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

## GET ALL THIS IN 33" DEPTH!

(Cabinet goes through average door openings)

### HUGE CAPACITY

IGLOO'S merchandisers have the extra storability to make more sales for you!

### LOW 32" FRONT

Greater accessibility, display-ability, and storability add up to faster sales-ability!

It's Easier  
TO SEE!  
It's Easier  
TO REACH!  
It's Easier  
TO BUY MORE!



### FRIGID IGLOO Self-Service FROZEN FOOD and ICE CREAM MERCHANDISERS

Streamlined design—narrow 33" depth for huge capacity sales making mass display, easy shopping features and economical operation make Igloo merchandisers first choice of distributors and retailers everywhere. Write for complete catalog data and the extra facts.

**FRIGID IGLOO MFG. CORP.**  
360 Ashburton Ave. • Yonkers 2, N.Y.

Circle No. 83 on Reader Service Card

## LETTERS

Continued from page 40

very near future. Somehow or other the first four issues of your magazine containing this series of articles have become lost, and we are wondering if you can furnish us with reprints of the articles in January, February, March and April. If there is a charge for these please forward your bill and we will remit promptly.

We feel that this series should do a great deal of good for new businesses, young businesses, and as a refresher even for the old timers. We expect to use some of these articles as a text for portions of our new operation.

RUSSELL C. CLAYTON  
Champion Sales Co.  
Philadelphia, Pa.

### Plans To Educate Dealers With Webster Articles

#### EDITOR:

Attached is our check in the amount of \$35. Please send to the writer's attention 100 copies of the George Webster article, "Effective Control of Job Costs," appearing on page 46 of the July issue.

This sort of thing is wonderful for the whole industry, and we are going to make sure every one of our dealers sees it.

R. D. ELDREDGE  
General Electric Co.  
Winter Park, Fla.

### Who Makes It?

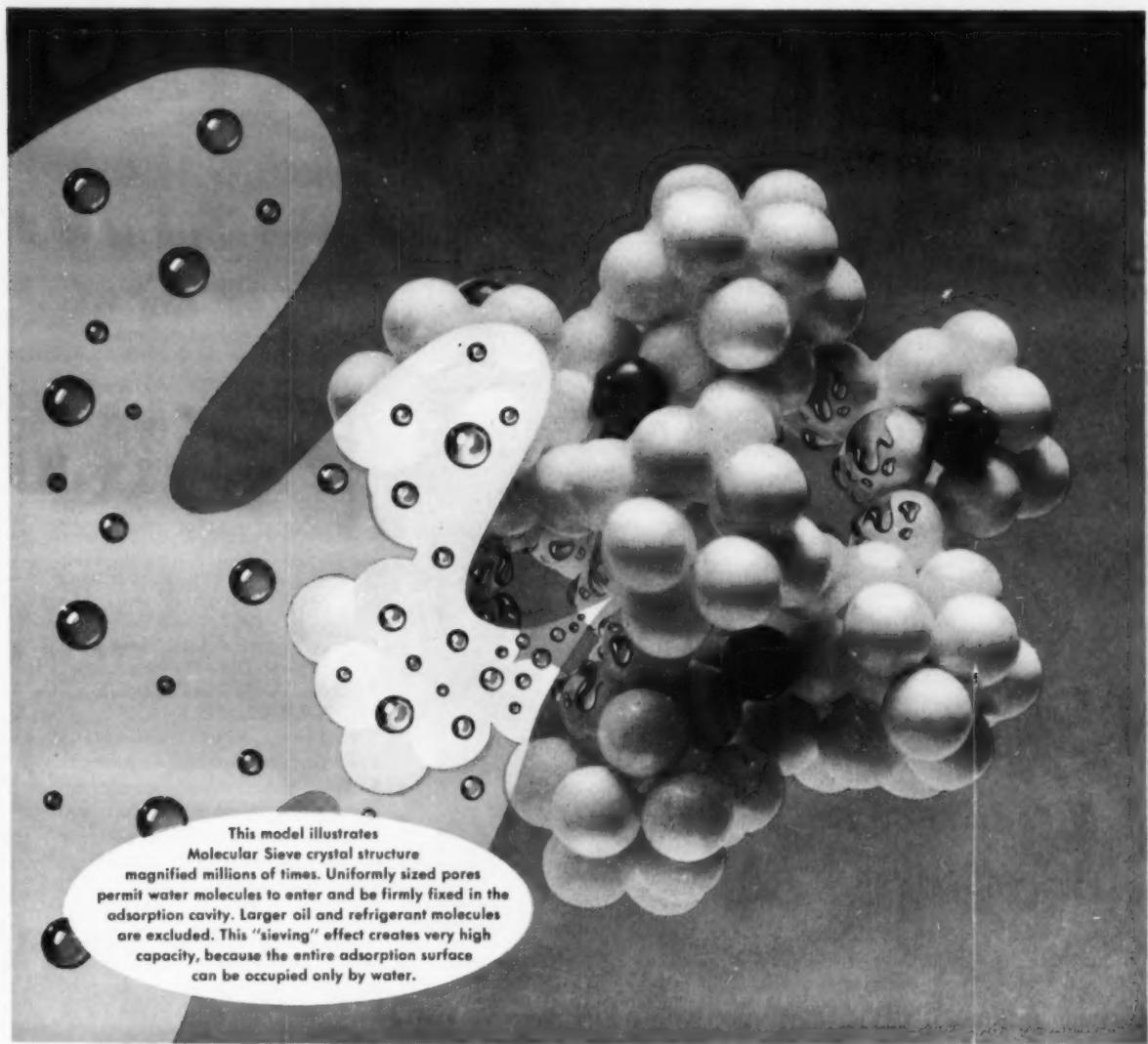
#### EDITOR:

Sometime last year I noticed in your magazine under New Products a small ice machine that made a square cube and was manufactured for small bars. I think the capacity was 35 lbs. to 50 lbs. daily. If it wouldn't be too much trouble would you please look this up and send me the manufacturers' name and address.

JAMES E. WILLIAMSON  
Electric & Refrigeration Serv.  
Shelby, Mont.

The ice maker in question is manufactured by Whirlpool Corp., St. Joseph, Michigan.

**BUY FROM YOUR  
REFRIGERATION WHOLESALER**



This model illustrates

Molecular Sieve crystal structure magnified millions of times. Uniformly sized pores permit water molecules to enter and be firmly fixed in the adsorption cavity. Larger oil and refrigerant molecules are excluded. This "sieving" effect creates very high capacity, because the entire adsorption surface can be occupied only by water.

## Now... SUPER DRYING for REFRIGERANTS

Now you can make refrigeration systems *really* dry! LINDE Molecular Sieves have many times the drying capacity of common desiccants under *actual operating conditions*. At a residual water level of 10 ppm in Refrigerant-12 at 140°F., Molecular Sieve Type 4A has a capacity of 17.5 weight per cent, *20 times* the capacity of the best silica desiccants (see chart). Drying performance is not affected by the presence of compressor oils.

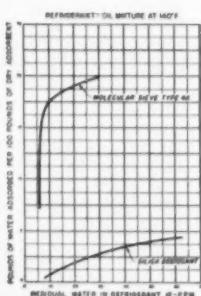
Pre-attrited Molecular Sieve Beads were developed specially for refrigerant service. They are smooth, hard and dust-free. The spherical form provides best packing characteristics with least pressure drop.



Molecular Sieve samples and performance data are available. Write today to Linde Company, Division of Union Carbide Corporation, Molecular Sieve Department, 30 East 42nd Street, New York 17, New York.

Molecular Sieve driers are supplied in wide ranges of sizes and designs by these companies:

Kenmore Machine Products, Incorporated	Lyons, New York
McIntire Company	Livingston, New Jersey
Mueller Brass Company	Port Huron, Michigan
Remco, Incorporated	Zelienople, Pennsylvania
Tube Manifold Corporation	North Tonawanda, New York
Henry Valve Company	Melrose Park, Illinois
Metrex Valve Company	Franklin Park, Illinois



"Linde" and "Union Carbide" are registered trade-marks of Union Carbide Corporation.

Circle No. 59 on Reader Service Card



## PICTURES IN THE NEWS



**READY FOR VIEWING** is the Ranchero demonstrator by Tranter Mfg., Inc. The show room on wheels carries Tranter equipment for demonstration which gives viewers a comparison of over the road truck refrigeration systems powered hydraulically or mechanically with a blower lowside. Customers can see the actual operation of the system as it would apply in a "live" truck.



**INDUSTRIAL "CLEAN ROOM"** for processing precision valves and parts for the missile ground support program is new addition at Superior Valve & Fittings Co. Atmosphere in glass-enclosed working chamber is controlled beyond strict requirements of surgical operating rooms. "Microscopic cleanliness of valves and parts in the fuel systems of missiles is essential," according to George R. Allen, Superior vice president. Temperature is kept at 69 F by 2-ton, 2-hp air-conditioning unit in parallel with electric strip heaters.

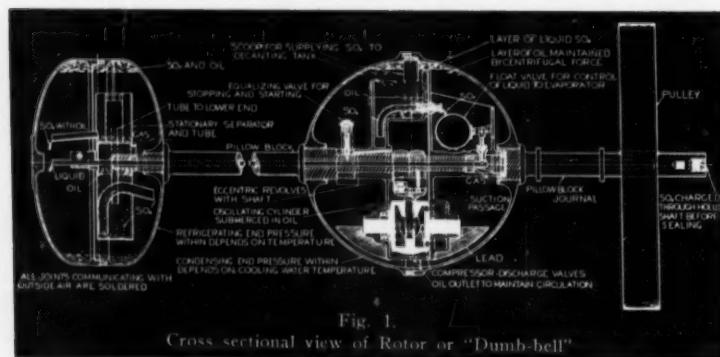


Fig. 1  
Cross sectional view of Rotor or "Dumb-bell"

**DUMB-BELL SHAPED** is the Audiffren refrigerating machine—the latest donation to the Recold Museum of air-conditioning and refrigeration equipment. Said to be the first hermetically-sealed machine ever made, it was invented by a French Monk, Marcel Audiffren. It operates on the compression system, using sulphur dioxide gas as the refrigerating agent. The machine was patented in 1913 and was used in ice-making plants and as a cooler for drinking water. It was donated by the Toledo, Ohio, RSES chapter and Willys Motors, Inc.

### N. J. WHOLESALER SUED BY KRAMER-TRENTON

Kramer-Trenton Co. has instituted Federal Court action against Melchior, Armstrong, Dessau Co., Inc., a wholesaler, Ridgefield, N.J., for infringement of two patents held by Kramer.

The action seeks a preliminary and final injunction against further infringement by the wholesaler; and accounting of profits and damages for each infringement; and costs and disbursements in the action.

The patents being infringed are U. S. Letters Patent No. 2,564,310 granted Aug. 14, 1951, covering means for controlling the head pressure in refrigerating systems; and U. S. Letters Patent No. 2,761-287 granted Sept. 4, 1956, covering means for controlling the high-side pressure in refrigerating systems (Kramer Winterstat systems).

### ASHAE, ASRE CONTINUE MERGER PLANS

American Society of Heating and Air-Conditioning Engineers and American Society of Refrigerating Engineers have approved in principle a method of merging the two societies. Full particulars of the merger plan will be mailed to members of both ASHAE and ASRE. Ballots will be taken in person or by proxy on Dec. 1 at the 45th semi-annual meeting of ASRE, and at a special meeting of the ASHAE membership.

### 400 COMPANIES JOIN ASHAE EXPOSITION

More than 400 leading manufacturers have engaged space at the 14th International Heating & Air-Conditioning Exposition, Jan. 26 to 29 at Convention Hall, Philadelphia.

An additional area has been opened in the south building to which new applications now are being assigned. The display already has become larger than that last held in Philadelphia in 1955.

The Exposition will be staged under the auspices of the American Society of Heating and Air-Conditioning Engineers. The Society's 64th annual meeting will be held concurrently.

# BANISH STUCK PUMPS!

→ GET ←

## PUMP AID

Now is the time to prevent stuck pumps . . . expensive and time consuming repairs next Spring — your BUSY season! After draining pump, simply inject PUMP AID into pump housing through drain hole. Aerosol packaged PUMP AID E-X-P-A-N-D-S to cover all interior surfaces. At start-up time — just throw the switch and your pump is running. PUMP AID is water soluble and washes away. Easy-to-follow directions on each can. May be used in any make or model pump.

### PUMP AID...

- PREVENTS CORROSION
- PRESERVES SEALS
- WILL NOT FREEZE
- WILL NOT EVAPORATE
- IS WATER SOLUBLE
- IS NOT TOXIC
- IS EASY TO USE
- IS REASONABLY PRICED

Order by the case of twelve cans today from your dealer and be prepared when shut-down time comes. Or write . . .



Complete literature on request or see your dealer TODAY!

**GARMAN  
COMPANY**

ST. LOUIS 22, MO.

Circle No. 88 on Reader Service Card  
BUSINESS • SEPTEMBER 1958

## OPPORTUNITIES

(Classified Advertising)

RATES: for "Positions Wanted," \$6.50 minimum, limit 25 words. For all other classifications, \$8.00 minimum for 25 words or under, each additional word 20¢. Boldface type or all capitals, \$10.00 minimum for 25 words or under, each additional word 25¢. All classified advertising payable in advance.

### BUSINESS OPPORTUNITY

HEATING & AIR-CONDITIONING CONTRACTING FIRM FOR SALE — Established, franchised dealer in metropolitan area Florida's west coast — top brand equipment. Complete installation and service facilities, trained personnel, all necessary equipment and inventory. Yearly gross \$220,000. Asking \$35,000. Box 9158, REFRIGERATION & AIR-CONDITIONING BUSINESS.

### OCCUPIES NEW QUARTERS

Heil-Quaker Corp. has completed a move which brings its executive, engineering, sales and advertising personnel to new modern facilities. The new offices are located at 647 Thompson Lane, Nashville 4, Tenn. The company plans to maintain plant operations at its factory in Lewisburg, Tenn.

## DON'T LOSE ANOTHER SALE!

Lost sales mean lost profits . . . unnecessarily. As a Coldin Dealer you can't miss—you are assured of the right cabinet in the right size at the right time. This makes sense . . . and makes money for you too!

Coldin manufactures quality refrigerators for every type of food handler—retailers, hotels, restaurants, schools, clubs, etc. You can tackle any segment of the entire field successfully as a Coldin franchised dealer. Investigate! Write for full details and catalog today.



**COLDIN  
CABINET CO., Inc.**  
2800 Webster Ave., N. Y. 58, N. Y.

Circle No. 89 on Reader Service Card

**Servicemen  
Agree...**

**BEACH-RUSS  
PORTABLE VACUUM PUMPS**  
are made with features they desire

High Performance Characteristics

Completely Portable



Automatic Lubrication

Single- or Two-Stage

Long Life



Quiet Operation

Minimum Attention

Valves Eliminated

Beach-Russ Vacuum Pumps are also made in types and sizes for evacuation and testing of refrigeration equipment on a production basis.

**BEACH-RUSS COMPANY** DEPT. 56  
50 CHURCH STREET • NEW YORK 7, N. Y.

Send descriptive literature covering  
 Model O Single-Stage Vacuum Pumps.  
 Model A Two-Stage Pumps.

NAME.....

COMPANY.....

ADDRESS.....

CITY..... ZONE..... STATE.....

**BEACH-RUSS CO.**  
50 CHURCH STREET • NEW YORK 7, N. Y.

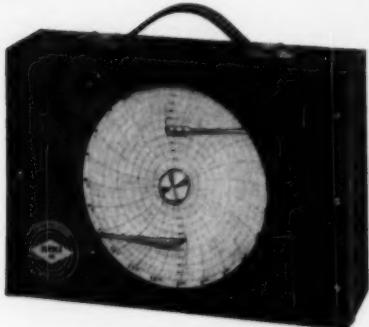
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# SERDEX

introduces

## LOWER-PRICED

humidity and temperature  
recorders



New Serdex Model 312C Hygrothermograph measures only  $10\frac{1}{2}$ " x  $7\frac{1}{2}$ " x  $3\frac{1}{2}$ ", weighs just  $4\frac{1}{2}$  lbs.

Accuracy and performance guaranteed unconditionally for a full year • Large, 6-inch Chart permits detailed analysis of area conditions • Buy either Hygrograph or Thermograph now; convert to Hygrothermograph later at big cash saving\*.

**NEW SERDEX HYGROGRAPH** with patented animal membrane Sensing Element guaranteed accurate within  $\pm 5\%$  over range of 15% to 95%, within temperature range of  $+32^{\circ}\text{F}$  to  $+130^{\circ}\text{F}$ . (Correction Chart available for temperatures as low as  $-30^{\circ}\text{F}$ .) Unit has very low lag constant; reacts almost instantaneously to changes in relative humidity. \*ONLY \$97.50; add Thermograph later for just \$27.50.

**NEW SERDEX THERMOGRAPH** accurate within  $\pm 2^{\circ}\text{F}$  over range of  $0^{\circ}\text{F}$  to  $100^{\circ}\text{F}$ . \*JUST \$75.00; add Hygrograph later for only \$50.00.

**NEW SERDEX HYGROTHERMOGRAPH** combines all the advantages of both the above instruments. Sensing Elements synchronized to provide same sensitivity, range lag. ONLY \$125.00.

WRITE FOR COMPLETE  
INFORMATION or order now!

**SERDEX**  
INCORPORATED

Relative Humidity Indicators, Recorders, Controllers  
12-D Bowdoin Square, Boston 14, Massachusetts

Wholesalers: Write for information

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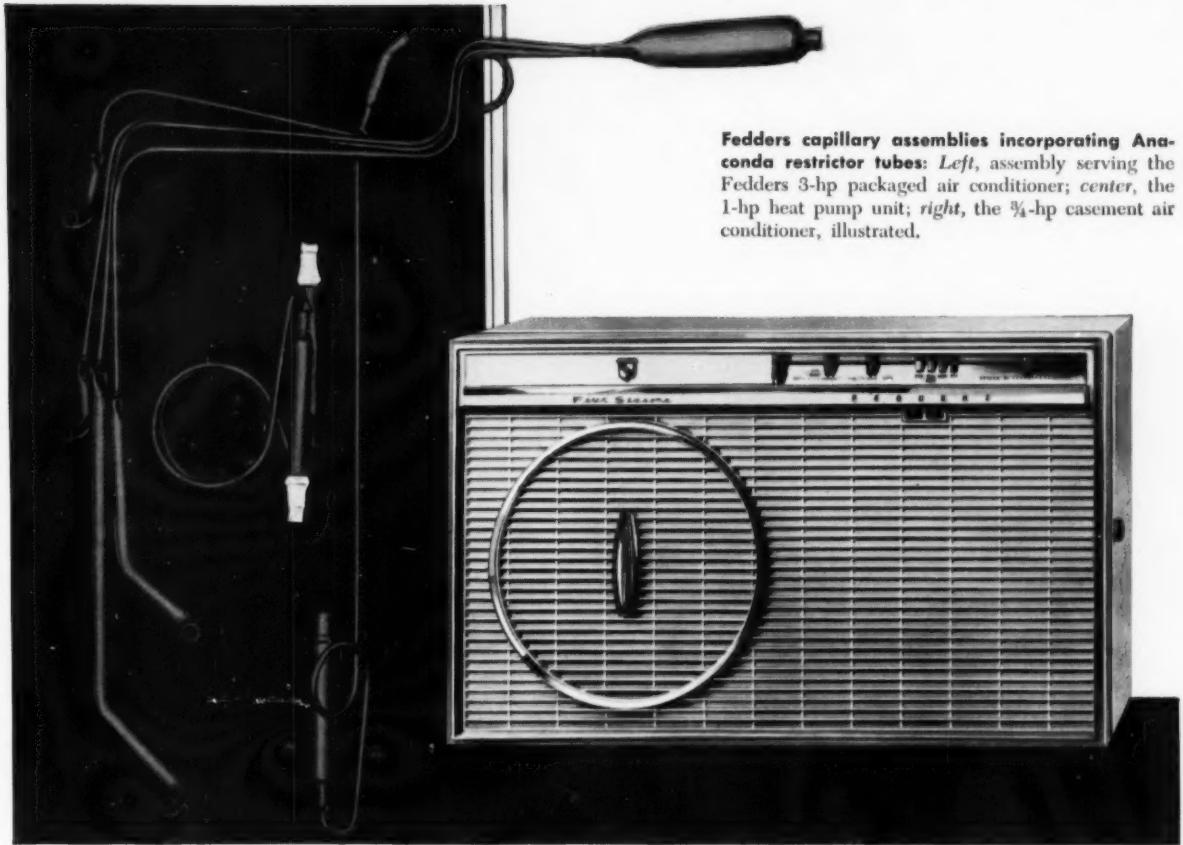
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**Fedders capillary assemblies incorporating Anaconda restrictor tubes:** *Left*, assembly serving the Fedders 3-hp packaged air conditioner; *center*, the 1-hp heat pump unit; *right*, the  $\frac{3}{4}$ -hp casement air conditioner, illustrated.

## "We use Anaconda Restrictor Tube 100%" —Fedders-Quigan Corp.

As one of the largest producers of room air conditioners, Fedders-Quigan Corporation, Maspeth, Long Island, uses miles of restrictor tube a year. Since 1954, Fedders has been using only Anaconda Restrictor Tube.

Fedders looks on the restrictor tube as the jugular vein of the air conditioner. The faithful performance of the entire unit depends largely on the tube's uniformity and quality. Fedders looks for these qualities in restrictor tubes:

1. Uniform performance within extremely close air-flow limits, made possible by consistently uniform inside diameter and a smooth, round, clean bore.

2. Easy bending, without fractures.

Fedders uses restrictor tube in four inside diameters in six lengths, reordering from Master Sample Reference Tubes. Duplicate Master Reference Samples kept at French Small Tube Division, The American Brass Company, insure that

all shipments have the air-flow limits originally established.

**Consistently high quality.** All Anaconda Restrictor Tubes are plug-drawn to finish. Every length is chamfered at both ends, inside and out. Each tube is thoroughly washed and dried, given a final air-flow test, carefully bundled, with ends of each bundle wrapped in paper. Anaconda Custom-Made Restrictor Tubes are made in both copper and aluminum, in nominal inside diameters from .025 to .090 inches.

Write for information or free Air-Flow Slide Rule Calculator. Address: French Small Tube Division, The American Brass Company, Box 1031, Waterbury 20, Conn. 5023

**ANACONDA®**  
**RESTRICTOR TUBES**

*Made by French Small Tube Division of The American Brass Company*

ANACONDA PRODUCTS FOR THE REFRIGERATION AND AIR-CONDITIONING INDUSTRY



Circle No. 2 on Reader Service Card

a publisher has only  
two basic responsibilities

**REFRIGERATION & AIR-CONDITIONING BUSINESS** Magazine  
has developed specialized methods to meet them both:

*to get his magazines to the right audience*



Franchise-Paid Circulation, developed and perfected over 28 years of specialized magazine publishing: readers are buyers, selected by specialists in every major marketing area, paid for by the men who select them, controlled and verified by daily contact—far beyond BPA auditing requirements.

*to get them read when they arrive*



Distilled Writing: all the facts, none of the verbiage, polished and condensed to give readers more articles, more easily read articles—guaranteed high readership for IPC magazines.



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